UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2017

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number 001-37368

ADAPTIMMUNE THERAPEUTICS PLC
(Exact name of Registrant as specified in its charter)

England and Wales	**Not Applicable**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

60 Jubilee Avenue, Milton Park
Abingdon, Oxfordshire OX14 4RX
United Kingdom
(44) 1235 430000
(Address of principal executive offices)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). ☒ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐	Accelerated filer ☒
Non-accelerated filer ☐	Smaller reporting company ☐
	Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected to use the extended transition period for complying with any new or revised financial accounting standard provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). ☐ Yes ☒ No

As of October 31, 2017 the number of outstanding ordinary shares par value £0.001 per share of the Registrant is 562,119,334.

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General information

In this Quarterly Report on Form 10-Q ("Quarterly Report"), "Adaptimmune," the "Group," the "Company," "we," "us" and "our" refer to Adaptimmune Therapeutics plc and its consolidated subsidiaries, except where the context otherwise requires.

Information Regarding Forward-Looking Statements

This Quarterly Report contains forward-looking statements that are based on our current expectations, assumptions, estimates and projections about us and our industry. All statements other than statements of historical fact in this Quarterly Report are forward-looking statements.

These forward-looking statements are subject to known and unknown risks, uncertainties, assumptions and other factors that could cause our actual results of operations, financial condition, liquidity, performance, prospects, opportunities, achievements or industry results, as well as those of the markets we serve or intend to serve, to differ materially from those expressed in, or suggested by, these forward-looking statements. These forward-looking statements are based on assumptions regarding our present and future business strategies and the environment in which we expect to operate in the future. Important factors that could cause those differences include, but are not limited to:

- our ability to successfully advance our MAGE-A10, MAGE-A4 and AFP SPEAR T-cells through clinical development and the timing within which we can recruit patients and treat patients in our clinical trials;
- our ability to successfully and reproducibly manufacture SPEAR T-cells in order to meet patient demand;
- further develop our commercial manufacturing process for our SPEAR T-cells, transfer such commercial process to third party contract manufacturers and for such third party contract manufacturers to manufacture SPEAR T-cells to the quality and on the timescales we require;
- the scope and timing of performance of our ongoing collaboration with GSK and transition of NY-ESO SPEAR T-cell program to GSK following exercise of option by GSK;
- the success, cost and timing of our product development activities and clinical trials;
- our ability to successfully advance our SPEAR T-cell technology platform to improve the safety and effectiveness of our existing SPEAR T-cell candidates and to submit Investigational New Drug Applications, or INDs, for new SPEAR T-cell candidates;
- the rate and degree of market acceptance of T-cell therapy generally, and of our SPEAR T-cells;
- government regulation and approval, including, but not limited to, the expected regulatory approval timelines for TCR therapeutic candidates;
- patents, including, any inability to obtain third party licenses, legal challenges thereto or enforcement of patents against us;
- the level of pricing and reimbursement for our SPEAR T-cells, if approved for marketing;
- general economic and business conditions or conditions affecting demand for our SPEAR T-cells in the markets in which we operate, both in the United States and internationally;
- volatility in equity markets in general and in the biopharmaceutical sector in particular;
- fluctuations in the price of materials and bought-in components;
- our relationships with suppliers and other third-party providers;
- increased competition from other companies in the biotechnology and pharmaceutical industries;
- claims for personal injury or death arising from the use of our SPEAR T-cell candidates;

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- changes in our business strategy or development plans, and our expected level of capital expenses;
- our ability to attract and retain qualified personnel;
- regulatory, environmental, legislative and judicial developments including a regulatory requirement to place any clinical trials on hold or to suspend any trials;
- a change in our status as an emerging growth company under the Jumpstart Our Business Start-ups Act of 2012, or JOBS Act;
- uncertainty about the future relationship between the United Kingdom and the European Union; and
- additional factors that are not known to us at this time.

Additional factors that could cause actual results, financial condition, liquidity, performance, prospects, opportunities, achievements or industry results to differ materially include, but are not limited to, those discussed under "Risk Factors" in Part II, Item 1A in this Quarterly Report and in our other filings with the Securities and Exchange Commission (the "SEC"). Additional risks that we may currently deem immaterial or that are not presently known to us could also cause the forward-looking events discussed in this Quarterly Report not to occur. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect" and similar words are intended to identify estimates and forward-looking statements. Estimates and forward-looking statements speak only at the date they were made, and we undertake no obligation to update or to review any estimate and/or forward-looking statement because of new information, future events or other factors. Estimates and forward-looking statements involve risks and uncertainties and are not guarantees of future performance. Our future results may differ materially from those expressed in these estimates and forward-looking statements. In light of the risks and uncertainties described above, the estimates and forward-looking statements discussed in this Quarterly Report might not occur, and our future results and our performance may differ materially from those expressed in these forward-looking statements due to, inclusive of, but not limited to, the factors mentioned above. Because of these uncertainties, you should not make any investment decision based on these estimates and forward-looking statements.

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PART I — FINANCIAL INFORMATION

Item 1. Financial Statements.

ADAPTIMMUNE THERAPEUTICS PLC
UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	September 30, 2017	December 31, 2016
Assets		
Current assets		
Cash and cash equivalents	$ 145,326	$ 158,779
Short-term deposits	—	22,694
Marketable securities - available for sale debt securities	86,532	—
Accounts receivable, net of allowance for doubtful accounts of $- and $-	4,063	1,480
Other current assets and prepaid expenses (including current portion of clinical materials)	17,983	15,798
Total current assets	**253,904**	**198,751**
Restricted cash	4,232	4,017
Clinical materials	2,096	2,580
Property, plant and equipment, net	39,771	27,899
Intangibles, net	1,374	1,268
Total assets	**301,377**	**234,515**
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable (including amounts due to related parties of $- and $326)	2,489	11,350
Accrued expenses and other accrued liabilities (including amounts due to related parties of $1 and $39)	23,491	17,528
Deferred revenue	42,592	11,392
Total current liabilities	**68,572**	**40,270**
Deferred revenue, non-current	—	24,962
Other liabilities, non-current	3,820	3,141
Total liabilities	**72,392**	**68,373**
Contingencies and commitments — Note 9		
Stockholders' equity		
Common stock - Ordinary shares par value £0.001, 701,103,126 authorized and 562,119,334 issued and outstanding (2016: 574,711,900 authorized and 424,775,092 issued and outstanding)	854	683
Additional paid in capital	452,553	341,200
Accumulated other comprehensive loss	(20,055)	(14,249)
Accumulated deficit	(204,367)	(161,492)
Total stockholders' equity	**228,985**	**166,142**
Total liabilities and stockholders' equity	**$ 301,377**	**$ 234,515**

See accompanying notes to unaudited condensed consolidated financial statements.

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ADAPTIMMUNE THERAPEUTICS PLC
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except share and per share data)

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Revenue	**$ 27,185**	**$ 2,416**	**$ 33,563**	**$ 5,662**
Operating expenses				
Research and development	(24,034)	(15,610)	(62,240)	(46,942)
General and administrative	(8,111)	(5,424)	(22,284)	(16,863)
Total operating expenses (including purchases from related parties, net of reimbursements of $67, $523, $781 and $1,852)	**(32,145)**	**(21,034)**	**(84,524)**	**(63,805)**
Operating loss	**(4,960)**	**(18,618)**	**(50,961)**	**(58,143)**
Interest income	713	289	1,465	839
Interest expense	(8)	—	(14)	—
Other income, net	3,602	(61)	7,256	1,595
Loss before income taxes	**(653)**	**(18,390)**	**(42,254)**	**(55,709)**
Income taxes	(225)	(104)	(621)	(456)
Net loss attributable to ordinary shareholders	**$ (878)**	**$ (18,494)**	**$ (42,875)**	**$ (56,165)**
Net loss per ordinary share				
Basic and diluted	**$ (0.00)**	**$ (0.04)**	**$ (0.08)**	**$ (0.13)**
Weighted average shares outstanding:				
Basic and diluted	561,239,864	424,711,900	516,352,141	424,711,900

See accompanying notes to unaudited condensed consolidated financial statements.

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ADAPTIMMUNE THERAPEUTICS PLC
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands)

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Net loss	**$ (878)**	**$ (18,494)**	**$ (42,875)**	**$ (56,165)**
Other comprehensive loss, net of tax				
Foreign currency translation adjustments, net of tax of $- and $-	(1,623)	(779)	(2,932)	(5,649)
Unrealized losses on available for sale debt securities	(1,578)	—	(2,874)	—
Total comprehensive loss for the period	**$ (4,079)**	**$ (19,273)**	**$ (48,681)**	**$ (61,814)**

See accompanying notes to unaudited condensed consolidated financial statements.

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ADAPTIMMUNE THERAPEUTICS PLC
UNAUDITED CONDENSED CONSOLIDATED STATEMENT OF CHANGE IN EQUITY
(in thousands, except share data)

				Accumulated other comprehensive loss			
	Common stock	Common stock	Additional paid in capital	Accumulated foreign currency translation adjustments	Accumulated unrealized gains (losses) on available for sale debt securities	Accumulated deficit	Total stockholders' equity
Balance as of 1 January 2017	424,775,092	$ 683	$ 341,200	$ (14,249)	$ —	$ (161,492)	$ 166,142
Net loss						(42,875)	(42,875)
Issuance of common stock	136,201,338	170	102,997				103,167
Issuance of shares upon exercise of stock options	1,142,904	1	400				401
Other comprehensive loss							
Foreign currency translation adjustments				(2,932)			(2,932)

Unrealized losses on available for sale debt securities					(2,874)		(2,874)
Share-based compensation expense			7,956				7,956
Balance as of September 30, 2017	**562,119,334**	**$ 854**	**$ 452,553**	**$ (17,181)**	**$ (2,874)**	**$ (204,367)**	**$ 228,985**

See accompanying notes to unaudited condensed consolidated financial statements.

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ADAPTIMMUNE THERAPEUTICS PLC
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Nine months ended September 30,	
	2017	**2016**
Cash flows from operating activities		
Net loss	$ (42,875)	$ (56,165)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	3,418	2,290
Amortization	267	122
Share-based compensation expense	7,956	6,825
Unrealized foreign exchange gains	(6,886)	(1,943)
Other	606	
Changes in operating assets and liabilities:		
Increase (decrease) in receivables and other operating assets	4,180	(912)
(Decrease) increase in non-current operating assets	(484)	2,041
Decrease (increase) in payables and deferred revenue	859	(2,796)
Net cash used in operating activities	**(32,959)**	**(50,538)**
Cash flows from investing activities		
Acquisition of property, plant and equipment	(22,791)	(4,840)
Acquisition of intangibles	(288)	(1,024)
Proceeds from disposal of property, plant and equipment	550	—
Maturity of short-term deposits	40,645	49,497
Investment in short-term deposits	(18,000)	(42,837)
Maturity or redemption of marketable securities	7,032	—
Investment in marketable securities	(93,218)	—
Net cash (used in) provided by investing activities	**(86,070)**	**796**
Cash flows from financing activities		
Proceeds from issuance of common stock, after offering expenses of $4,774	103,167	—
Proceeds from exercise of stock options	401	—
Net cash provided by financing activities	**103,568**	**—**
Effect of currency exchange rate changes on cash, cash equivalents and restricted cash	2,223	(4,443)
Net decrease in cash and cash equivalents	(13,238)	(54,185)
Cash, cash equivalents and restricted cash at start of period	162,796	198,771
Cash, cash equivalents and restricted cash at end of period	**$ 149,558**	**$ 144,586**

See accompanying notes to unaudited condensed consolidated financial statements.

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ADAPTIMMUNE THERAPEUTICS PLC
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Note 1 - General

Adaptimmune Therapeutics plc is registered in England and Wales. Its registered office is 60 Jubilee Avenue, Milton Park, Abingdon, Oxfordshire, OX14 4RX, United Kingdom. Adaptimmune Therapeutics plc and its subsidiaries (collectively "Adaptimmune" or the "Company") is a clinical-stage biopharmaceutical company focused on novel cancer immunotherapy products based on its proprietary SPEAR (Specific Peptide Enhanced Affinity Receptor) T-cell platform. The Company has developed a comprehensive proprietary platform that enables it to identify cancer targets, find and genetically engineer T-cell receptors ("TCRs"), and produce TCR therapeutic candidates for administration to patients. The Company engineers TCRs to increase their affinity to cancer specific peptides in order to destroy cancer cells in patients.

The Company is subject to a number of risks similar to other biopharmaceutical companies in the early stage including, but not limited to, the need to obtain adequate additional funding, possible failure of preclinical programs or clinical programs, the need to obtain marketing approval for its SPEAR T-cells, competitors developing new technological innovations, the need to successfully commercialize and gain market acceptance of the Company's SPEAR T-cells, the need to develop a suitable commercial manufacturing process and protection of proprietary technology. If the Company does not successfully commercialize any of its SPEAR T-cells, it will be unable to generate product revenue or achieve profitability. The Company had an accumulated deficit of $204.4 million as of September 30, 2017.

Note 2 - Summary of Significant Accounting Policies

(a) Basis of presentation

The condensed consolidated interim financial statements of Adaptimmune Therapeutics plc and its subsidiaries and other financial information included in this

Quarterly Report are unaudited and have been prepared in accordance with generally accepted accounting principles in the United States of America ("U.S. GAAP") and are presented in U.S. dollars. All significant intercompany accounts and transactions between the Company and its subsidiaries have been eliminated on consolidation.

The unaudited condensed interim financial statements presented in this Quarterly Report should be read in conjunction with the consolidated financial statements and accompanying notes included in the Company's Annual Report on Form 10-K filed with the SEC on March 13, 2017 (the "Annual Report"). The balance sheet as of December 31, 2016 was derived from audited consolidated financial statements included in the Company's Annual Report but does not include all disclosures required by U.S. GAAP. The Company's significant accounting policies are described in Note 2 to those consolidated financial statements.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted from these interim financial statements. However, these interim financial statements include all adjustments, consisting only of normal recurring adjustments, which are, in the opinion of management, necessary to fairly state the results of the interim period. The interim results are not necessarily indicative of results to be expected for the full year.

(b) Use of estimates in interim financial statements

The preparation of interim financial statements, in conformity with U.S. GAAP and SEC regulations, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and reported amounts of revenues and expenses during the reporting period. Estimates and assumptions are primarily made in relation to the valuation of share options, valuation allowances relating to deferred tax assets, revenue recognition, estimating clinical trial expenses and estimating reimbursements from R&D tax and expenditure credits. If actual results differ from the Company's estimates, or to the extent these estimates are adjusted in future periods, the Company's results of operations could either benefit from, or be adversely affected by, any such change in estimate.

(c) Going concern

Management considers that there are no conditions or events, in the aggregate, that raise substantial doubt about the entity's ability to continue as a going concern for a period of at least one year from the date the financial statements are issued. This evaluation is based on relevant conditions and events that are known and reasonably knowable at the date that the financial statements are issued, including:

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a. The Company's current financial condition, including its liquidity sources;
b. The Company's conditional and unconditional obligations due or anticipated within one year;
c. The funds necessary to maintain the Company's operations considering its current financial condition, obligations, and other expected cash flows; and
d. Other conditions and events, when considered in conjunction with the above that may adversely affect the Company's ability to meet its obligations.

(d) Cash, cash equivalents and restricted cash

The Company considers all highly-liquid investments with a maturity at acquisition date of three months or less to be cash equivalents. Cash and cash equivalents comprise cash balances and deposits with maturities of three months or less. The cash and cash equivalents and short-term deposits are held with multiple banks and we monitor the credit rating of those banks. The Company maintains cash balances in excess of amounts insured by the Federal Deposit Insurance Corporation in the U.S. and the U.K. Government Financial Services Compensation Scheme in the U.K.

The Company's restricted cash consists of cash providing security for letters of credit in respect of lease agreements.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the balance sheet that sum to the total of the same such amounts shown in the statement of cash flows (in thousands).

	September 30, 2017	December 31, 2016
Cash and cash equivalents	$ 145,326	$ 158,779
Restricted cash	4,232	4,017
Total cash, cash equivalents, and restricted cash shown in the statement of cash flows	**$ 149,558**	**$ 162,796**

(e) Available-for-sale debt securities

At September 30, 2017, the Company has the following investments in available-for-sale debt securities, which are categorized as cash equivalents or marketable securities — available-for-sale debt securities on the balance sheet depending on their maturity at acquisition (in thousands):

	Maturity	Amortized cost	Gross Unrealized Gains	Gross Unrealized Losses	Foreign currency translation adjustment	Aggregate Estimated Fair Value
Cash equivalents:						
Commercial paper	Less than 3 months	$ 1,099	$	$ (20)	$ 20	$ 1,099
		$ 1,099	**$ —**	**$ (20)**	**$ 20**	**$ 1,099**
Marketable securities:						
Corporate debt securities	3 months to 1 year	$ 86,575	$ 1	$ (2,774)	$ 2,730	$ 86,532
		$ 86,575	**$ 1**	**$ (2,774)**	**$ 2,730**	**$ 86,532**

Management determines the appropriate classification of its investments in available-for-sale debt securities at the time of purchase and reevaluates such designation as of each reporting date. The securities are classified as current or non-current marketable securities — available-for-sale debt securities based on the maturity dates and management's intentions.

At September 30, 2017, the Company has classified all of its available-for-sale debt securities, including those with maturities beyond one year, as current assets on the accompanying consolidated balance sheets based on the highly-liquid nature of these investment securities and because these investment securities are considered available for use in current operations.

The investment in available-for-sale debt securities is measured at fair value at each reporting date. Unrealized gains and losses are excluded from earnings and are reported as a component of comprehensive loss. Realized gains and losses, interest income and amortization of premiums and discounts at acquisition are included in other income (expense), net. In the three months and nine months ended September 30, 2017, proceeds from the maturity or redemption of available for sales securities were $7,032,000. There were no realized gains or losses recognized on the maturity of available-for-sale securities during the three and nine months ended September 30, 2017 and, as a result, the Company did not reclassify any amount out of accumulated other comprehensive loss for the same period.

At each reporting date, the Company assesses whether each individual investment is impaired, which occurs if the fair value is less than the amortized cost, adjusted for amortization of premiums and discounts at acquisition. If the investment is impaired, the impairment is assessed to determine if it is other than temporary. Impairments judged to be other than temporary are included in other income (expense), net when they are identified. At September 30, 2017, the aggregate fair value of securities held by the Company in an unrealized loss position was $85,630,000, which consisted of 39 securities. No securities have been in an unrealized loss position for more than one year. At September 30, 2017, these securities are not considered to be other than temporarily impaired because the impairments are not severe, have been for a short duration and are due to normal market and exchange rate fluctuations. Furthermore, the Company does not intend to sell the debt securities in an unrealized loss position and it is unlikely that the Company will be required to sell these securities before the recovery of the amortized cost.

The cost of securities sold is based on the specific-identification method. Interest on debt securities is included in interest income.

Our investment in available-for-sale debt securities is subject to credit risk The Company's investment policy limits investments to certain types of instruments, such as money market instruments and corporate debt securities, places restrictions on maturities and concentration by type and issuer and specifies the minimum credit ratings for all investments and the average credit quality of the portfolio.

(f) Fair value measurements

The Company is required to disclose information on all assets and liabilities reported at fair value that enables an assessment of the inputs used in determining the reported fair values. The fair value hierarchy prioritizes valuation inputs based on the observable nature of those inputs. The hierarchy defines three levels of valuation inputs:

Level 1 — Quoted prices in active markets for identical assets or liabilities

Level 2 — Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly

Level 3 — Unobservable inputs that reflect the Company's own assumptions about the assumptions market participants would use in pricing the asset or liability

The carrying amounts of the Company's cash and cash equivalents, short-term deposits, restricted cash, accounts receivable, accounts payable and accrued expenses approximate fair value because of the short-term nature of these instruments. The fair value of marketable securities, which are measured at fair value on a recurring basis is detailed in Note 5, *Fair value measurements.*

(g) Related parties

The Company has historically entered into several agreements with Immunocore Limited ("Immunocore"). During the nine months ended September 30, 2017, Immunocore has invoiced the Company in respect of: (i) services provided under a target collaboration agreement (which terminated on March 1, 2017); (ii) costs relating to prosecution of jointly owned patents; and (iii) property rents.

During the nine months ended September 30, 2017, all of the Company's U.K-based research and development and corporate staff moved into the Company's new building at Milton Park, Oxfordshire, which comprises laboratory and office space. Consequently, the Company's lease from Immunocore of premises formerly used for research and development terminated on June 1, 2017 and the Company received $550,000 in relation to leasehold improvements as provided for under the lease. The lease of the Company's former corporate office premises was assigned to Immunocore effective from July 1, 2017 in a transaction on arms-length terms.

As of the closing of the Company's registered direct offering of its American Depositary Shares on April 10, 2017, Immunocore held less than 5% of the Company's shares.

(h) New accounting pronouncements

Adopted in the period

Intra-Entity Transfers of Assets Other Than Inventory

The Company has adopted Accounting Standards Update ("ASU") ASU 2016-16 -*Income Taxes: Intra-Entity Transfers of Assets Other Than Inventory* issued by the Financial Accounting Standards Board ("FASB") in October 2016, which requires that entities recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The guidance has been adopted on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption prospectively to all arrangements entered into or materially modified after January 1, 2017. The adoption of this guidance did not have any impact on the financial position, results of operations or cash flows.

To be adopted in future periods

Revenue from Contracts with Customers

In May 2014, the FASB issued ASU 2014-09 -*Revenue from Contracts with Customers* ("ASU 2014-09") which requires a new approach to revenue recognition and, in March, April, May and December 2016, the FASB issued additional clarification related to this guidance. This guidance has been codified within Accounting Standard Codification Topic 606, *Revenue from Contracts with Customers* ("ASC 606"). The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve that core principle, an entity should apply the following steps:

Step 1: Identify the contract(s) with a customer.

Step 2: Identify the performance obligations in the contract.

Step 3: Determine the transaction price.

Step 4: Allocate the transaction price to the performance obligations in the contract.

Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation.

The Company intends to adopt the guidance retrospectively, with the cumulative effect of initially applying the guidance recognized at the date of initial application, with effect from January 1, 2018. Whilst the Company's assessment of the impact of the guidance is substantially complete, the cumulative effect of adopting the guidance on our financial statements cannot reasonably be quantified at this time because it is dependent on estimates, such as the probability of future milestone payments, which cannot be determined until the date of initial application. However, the adoption of ASC 606 may have a material impact on the Company's financial statements due to the following:

- Under the collaboration and license agreement with GSK (the "GSK Agreement"), the Company will receive non-substantive milestone payments in the future upon achievement of specified development milestones. Non-substantive milestones are currently included within the transaction price upon achievement of the milestone and recognized over the period during which we are delivering services to GSK. ASC 606 requires an entity to estimate the amount of consideration to which the entity will be entitled in exchange for transferring the promised goods or services to a customer. This includes an estimate of variable consideration to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. This may result in milestone payments being recognized earlier under ASC 606 than under existing guidance, if it is considered probable that the milestone will be achieved.

- Upfront payments and non-refundable milestone payments are currently recognized in revenue using the proportional performance model ratably over the period that services are rendered, unless another attribution method is determined to more closely approximate the delivery of the goods or services to the customer. ASC 606 requires an entity to recognize revenue using a measure of progress that depicts the transfer of control of the goods or services to the customer. We consider that an input measure, such as costs incurred or labor hours, relative to the total expected inputs will be the appropriate measure to depict the transfer of control of the services under the GSK Agreement. This may impact the timing of our revenue from the GSK Agreement.

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ASC 606 requires an entity to provide financial statement users with sufficient information to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. To help achieve this objective, ASC 606 requires certain quantitative and qualitative disclosures, which will be more extensive than our current revenue disclosures.

The Company continues to monitor additional changes, modifications, clarifications or interpretations undertaken by the FASB, which may impact the Company's assessment of ASC 606.

Accounting for Leases

In February 2016, the FASB issued ASU 2016-02 -*Leases*. The guidance requires that lessees recognize a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term at the commencement date. The guidance also makes targeted improvements to align lessor accounting with the lessee accounting model and guidance on revenue from contracts with customers. The guidance is effective for the fiscal year beginning January 1, 2019, including interim periods within that fiscal year. Early application is permitted. The guidance must be adopted on a modified retrospective transition approach for leases existing, or entered into after, the beginning of the earliest comparative period presented in the financial statements. The Company is currently evaluating the impact of the guidance on the consolidated financial statements.

Measurement of Credit Losses on Financial Instruments

In June 2016, the FASB issued ASC 2016-13 —*Financial Instruments — Credit losses*, which replaces the incurred loss impairment methodology for financial instruments in current GAAP with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The guidance is effective for the fiscal year beginning January 1, 2020, including interim periods within that fiscal year. Early application is permitted for the fiscal year beginning January 1, 2019, including interim periods within that fiscal year. The guidance must be adopted using a modified-retrospective approach and a prospective transition approach is required for debt securities for which an other-than-temporary impairment had been recognized before the effective date. The Company is currently evaluating the impact of the guidance on the consolidated financial statements.

Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the FASB issued ASU 2016-01 -*Financial Instruments - Overall: Recognition and Measurement of Financial Assets and Financial Liabilities*, which amended the guidance on the recognition and measurement of financial assets and financial liabilities. The new guidance requires that equity investments (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) are measured at fair value with changes in fair value recognized in net income. The guidance also requires the use of an exit price when measuring the fair value of financial instruments for disclosure purposes, eliminates the requirement to disclose the methods and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost and requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset. The guidance is effective for the fiscal year beginning January 1, 2018, including interim periods within that fiscal year. The Company does not believe the adoption of the guidance will have a material impact on the consolidated financial statements.

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Note 3 — Revenue

Revenue represents recognized income from the GSK Agreement which requires the Company to provide multiple deliverables to GSK. The GSK Agreement related to up to five target programs, the first of which was the NY-ESO SPEAR T-cell program. On September 7, 2017, and by way of an amendment agreement (the "Amendment"), GSK exercised its option to obtain an exclusive license to research, develop, and commercialize the Company's NY-ESO SPEAR T-cell therapy program. The Amendment also specified the activities required to transition the NY-ESO SPEAR T-cell program to GSK. Transition of the program is targeted for completion during 2018.

The exercise of the NY-ESO option and the Amendment has been accounted for as a modification of an existing arrangement. As of September 7, 2017, we have accounted for the modified arrangement as a multiple-element arrangement consisting of the following deliverables (i) an exclusive license to research, develop, and commercialize the Company's NY-ESO SPEAR T-cell therapy program, (ii) the transitional development program for the NY-ESO Spear T-cell during the transition period, (iii) additional transitional services, when and if required by GSK and reimbursed when performed and (iv) the development of, and option to obtain an exclusive license to a second target, PRAME. As provided under the GSK Agreement, GSK continues to have the right to nominate three additional target peptides, excluding any targets on which work is already under way. Management does not consider this to be a deliverable at September 7, 2017, because it represents a substantive option not priced at a significant

and incremental discount. After the transition, GSK will assume responsibility for all NY-ESO-related activities.

Upon modification, the non-contingent arrangement consideration was allocated between the separate deliverables using the Company's best estimate of the relative selling price. In determining the best estimate, the Company considered internal pricing objectives it used in negotiating the GSK Agreement and the Amendment, together with internal data regarding the cost and margin of providing services for each deliverable taking into account the different stage of development of each development program.

Under the GSK Agreement, the Company received an upfront payment of $42.1 million in June 2014 and has achieved non-substantive development milestones of $49.3 million, of which $10.3 million were achieved in the nine months ended September 30, 2017. Upon exercise of the NY-ESO option, the Company is entitled to receive an option exercise fee of £30 million (approximately $38 million), of which $26.6 million was received in September 2017 and the remainder is payable upon transition of the program to GSK, which is expected to occur during 2018. The Company is entitled to further non-substantive milestone payments based on the achievement of development milestones by the Company relating to the NY-ESO SPEAR T-cell program. In addition to the development milestone payments due in relation to the NY-ESO SPEAR T-cell program, the Company is also entitled to non-substantive milestone payments based on achievement of development milestones under the PRAME SPEAR T-cell program, the second target program nominated by GSK under the GSK Agreement.

The Company will also be entitled to further development and commercialization milestone payments based on achievement of specified milestones by GSK. The Company is entitled to royalties from GSK on all GSK sales of TCR therapeutic products licensed under the GSK Agreement, varying between a mid-single-digit percentage and a low-double-digit percentage of net sales. Sales milestones also apply once any TCR therapeutic covered by the GSK Agreement is on the market.

The revenue allocated to the exclusive license to research, develop, and commercialize the Company's NY-ESO SPEAR T-cell therapy program will be recognized as revenue upon commencement of the exclusive license, which occurs on completion of defined transition activities and transition of sponsorship of clinical programs to GSK. The revenue allocated to the transitional development program for the NY-ESO Spear T-cells and the development of, and option to obtain an exclusive license to a second target, PRAME is recognized using the proportional performance model in revenue systematically over the period in which the Company is delivering services under the GSK Agreement, which is determined to be the estimated duration of the development activities to be performed by Adaptimmune under the GSK Agreement.

Management regularly reviews and monitors the performance of the GSK Agreement to determine the period over which the Company will be delivering services to GSK: and when a change in facts or circumstances occurs, the estimated is adjusted and the revenue is recognized based on the revised estimate. The difference between the cumulative revenue recognized based on the previous estimate and the revenue recognized based on the revised estimate is recognized as an adjustment to revenue in the period in which the change in estimate occurs. Upon the exercise of the NY-ESO option, the estimate of the period over which the Company will be delivering services to GSK in relation to the NY-ESO Spear T-Cell development program has significantly reduced, resulting in an increase in revenue amortization of $17.5 million in September 2017. Management estimates that all deferred revenue, totaling $42.6 million, will now be amortized within 12 months.

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The GSK Agreement is effective until all payment obligations expire. The GSK Agreement can also be terminated on a collaboration program-by-collaboration program basis by GSK for lack of feasibility or inability to meet certain agreed requirements. Both parties have rights to terminate the GSK Agreement for material breach upon 60 days' written notice or immediately upon insolvency of the other party. GSK has additional rights to terminate either the GSK Agreement or any specific license or collaboration program on provision of 60 days' notice to us. The Company also has rights to terminate any license where GSK ceases development or withdraws any licensed TCR therapeutic in specified circumstances.

Note 4 — Loss per share

The dilutive effect of 75,087,783, 47,392,118, 69,136,398 and 44,951,407 stock options for the three months ended September 30, 2017 and 2016 and the nine months ended September 30, 2017 and 2016, respectively have been excluded from the diluted loss per share calculation, because they would have an antidilutive effect on the loss per share for the period.

Note 5 — Fair value measurements

Assets and liabilities measured at fair value on a recurring basis based on Level 1, Level 2, and Level 3 fair value measurement criteria as of September 30, 2017 are as follows (in thousands):

	September 30, 2017	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Assets:				
Marketable securities:				
Corporate debt securities	$ 86,532	$ 86,532	$ —	$ —

The Company estimates the fair value of available-for-sale debt securities with the aid of a third party valuation service, which uses actual trade and indicative prices sourced from third-party providers on a daily basis to estimate the fair value. If observed market prices are not available (for example securities with short maturities and infrequent secondary market trades), the securities are priced using a valuation model maximizing observable inputs, including market interest rates.

Note 6 — Property, plant and equipment, net

Property, plant and equipment, net consisted of the following (in thousands):

	September 30, 2017	December 31, 2016
Computer equipment	$ 2,339	$ 1,904
Laboratory equipment	16,978	11,423
Office equipment	837	265
Leasehold improvements	27,268	4,498
Assets under construction	129	14,332
	47,551	32,422
Less accumulated depreciation	(7,780)	(4,523)
	$ 39,771	**$ 27,899**

Depreciation expense was $1,395,000 and $779,000 for the three months ended September 30, 2017 and 2016, respectively, and $3,418,000 and $2,290,000 for the nine months ended September 30, 2017 and 2016, respectively.

Note 7 — Intangible assets, net

Intangible assets, net consisted of the following (in thousands):

	September 30, 2017	December 31, 2016
Acquired software licenses	$ 1,699	$ 1,310
Licensed IP rights - completed technology used in R&D	198	183
	1,897	1,493
Less accumulated amortization	(523)	(225)
	$ 1,374	**$ 1,268**

Amortization expense was $108,000 and $40,000 for the three months ended September 30, 2017 and 2016, respectively, and $267,000 and $122,000 for the nine months ended September 30, 2017 and 2016, respectively.

Note 8 — Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consisted of the following (in thousands):

	September 30, 2017	December 31, 2016
Clinical & Development Accruals	$ 7,540	$ 4,938
Accrued employee expenses	5,351	4,539
Accrued capital expenditure	709	3,954
VAT	6,067	2,014
Accrued expenses	3,486	1,003
Other	338	1,080
	$ 23,491	**$ 17,528**

The Company typically has a receivable for VAT. At September 30, 2017 and December 31, 2016, there was a VAT payable due to VAT arising on the milestone payments invoiced to GSK in the previous quarter.

Note 9 — Contingencies and commitments

Leases

Future minimum lease payments under operating leases at September 30, 2017 are presented below (in thousands):

	September 30, 2017
2017	$ 479
2018	3,051
2019	3,755
2020	3,797
2021	3,841
Thereafter	18,917
	$ 33,840

The Company leases property under operating leases expiring through 2027. Lease expenses amounted to $802,000 and $327,000 for the three months ended September 30, 2017 and 2016 and $2,882,000 and $1,159,000 for the nine months ended September 30, 2017 and 2016, respectively, which is included within research and development and general and administrative expenses in the Company's unaudited consolidated statements of operations.

In May 2017, the Company entered into an agreement for the lease of a building at Milton Park, Oxfordshire, U.K. The term of the lease expires on October 23, 2041, with termination options exercisable by the Company on the fifth anniversary of the lease commencement date and at approximately five yearly intervals thereafter. The related lease commitments are included in the table above.

Capital commitments

At September 30, 2017, the Company had commitments for capital expenditure totaling $1,082,000, which the Company expects to incur within one year.

Commitments for clinical materials, clinical trials and contract manufacturing

At September 30, 2017, the Company had non-cancellable commitments for purchase of clinical materials, executing and administering clinical trials, and for contract manufacturing of $74,240,000, of which the Company expects to pay $34,163,000 within one year, $21,364,000 in one to three years, $17,535,000 in three to five years, and $1,178,000 after five years. The amount and timing of these payments vary depending on the rate of progress of development and clinical trial enrollment rates. The Company's subcontracted costs for clinical trials and contract manufacturing were $29,587,000 and $15,908,000 for the nine months ended September 30, 2017 and 2016, respectively.

Bellicum Pharmaceuticals Inc., Co-Development and Co-Commercialization Agreement

On December 16, 2016, the Company entered into a Co-Development and Co-Commercialization Agreement with Bellicum Pharmaceuticals, Inc. ("Bellicum") in order to facilitate a staged collaboration to evaluate, develop and commercialize next generation T-cell therapies.

Under the agreement, the Company will evaluate Bellicum's GoTCR technology (inducible MyD88/CD40 co-stimulation, or iMC) with the Company's SPEAR T-cells for the potential to create enhanced T-cell therapeutics. Depending on results of the initial preclinical proof-of-concept phase, the agreement may progress to a two-target co-development and co-commercialization phase. To the extent necessary, and in furtherance of the parties' proof-of-concept and co-development efforts, the parties granted

each other a royalty-free, non-transferable, non-exclusive license covering their respective technologies for purposes of facilitating such proof-of-concept and co-development efforts. In addition, as to covered therapies developed under the agreement, the parties granted each other a reciprocal exclusive license for the commercialization of such therapies. During the proof of concept phase, each party bears its own costs and there are no payments made between the Company and Bellicum. Any research and development costs incurred by the Company with third parties have been accounted for in accordance with the Company's accounting policy for research and development expenses.

With respect to any joint commercialization of a covered therapy, the parties agreed to negotiate in good faith the commercially reasonable terms of a co-commercialization agreement. The parties also agreed that any such agreement shall provide for, among other things, equal sharing of the costs of any such joint commercialization and the calculation of profit shares as set forth in the agreement.

The agreement will expire on a country-by-country basis once the parties cease commercialization of the T-cell therapies covered by theagreement, unless earlier terminated by either party for material breach, non-performance or cessation of development, bankruptcy/insolvency, or failure to progress to co-development phase.

Merck Combination Agreement

On October 27, 2016, the Company entered into a clinical trial collaboration agreement with Merck & Co., Inc. ("Merck") (known as MSD outside the United States and Canada), for the assessment of the NY-ESO SPEAR T-cell therapy in combination with Merck's PD-1 inhibitor, KEYTRUDA® (pembrolizumab), in patients with multiple myeloma. Under the terms of the agreement, each of Merck and the Company will manufacture and supply its relevant compound for use in the combination study. Each of the Company and Merck are responsible for their own costs incurred in the performance of obligations under the agreement. Any research and development costs incurred by the Company with third parties have been accounted for in accordance with the Company's accounting policy for research and development expenses. The agreement will last until the earlier of delivery of the final study report or study completion. Either party may terminate the agreement for material breach, patient safety, regulatory action preventing supply of compound or withdrawal of regulatory approval for one of the combination study compounds. Merck may also terminate the agreement where it believes its compound is being used in an unsafe manner. As a result of GSK's exercise of its option over the NY-ESO SPEAR T-cell program, the clinical trial and performance obligations covered by the agreement with Merck will transition to GSK at the same time as other clinical trials using the NY-ESO SPEAR T-cell.

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MD Anderson Strategic Alliance

On September 26, 2016, the Company announced that it had entered into a multi-year strategic alliance with The University of Texas MD Anderson Cancer Center ("MD Anderson") designed to expedite the development of T-cell therapies for multiple types of cancer. The Company and MD Anderson are collaborating on a number of studies including clinical and preclinical development of the Company's SPEAR T-cell therapies targeting NY-ESO and MAGE-A10 and will collaborate on future clinical stage first and second generation SPEAR T-cell therapies such as MAGE-A4 across a number of cancers, including bladder, lung, ovarian, head and neck, melanoma, sarcoma, esophageal and gastric cancers.

Under the terms of the agreement, the Company has committed at least $19,644,000 to fund studies. Payment of this funding is contingent on mutual agreement to study orders in order for any study to be included under the alliance and the performance of set milestones by MD Anderson. The Company made an upfront payment of $3,412,000 to MD Anderson in the nine months ended September 30, 2017 and is obligated to make further payments to MD Anderson as certain milestones are achieved. These costs will be expensed to research and development as MD Anderson renders the services under the strategic alliance.

The agreement may be terminated by either party for material breach by the other party. Individual studies may be terminated for, amongst other things, material breach, health and safety concerns or where the institutional review board, the review board at the clinical site with oversight of the clinical study, requests termination of any study. Where any legal or regulatory authorization is finally withdrawn or terminated, the relevant study will also terminate automatically.

Universal Cells Research, Collaboration and License Agreement

On November 25, 2015, the Company entered into a Research, Collaboration and License Agreement relating to gene editing andHuman Leukocyte Antigen ("HLA") engineering technology with Universal Cells, Inc. ("Universal Cells"). The Company paid an upfront license and start-up fee of $2.5 million to Universal Cells in November 2015, a milestone payment of $3.0 million in February 2016 and further milestone payments of $0.8 million in 2017. Further milestone payments of up to $43.5 million are payable if certain development and product milestones are achieved. Universal Cells would also receive a profit-share payment for the first product, and royalties on sales of other products utilizing its technology. The upfront license and start-up fee and milestone payments were expensed to research and development when incurred.

ThermoFisher License Agreement

In 2012, the Company entered into a series of license and sub-license agreements with Life Technologies Corporation, part of ThermoFisher Scientific, Inc. ("ThermoFisher") that provide the Company with a field-based exclusive license under certain intellectual property rights owned or controlled by ThermoFisher. The Company paid upfront license fees of $1.0 million relating to the license and sublicense agreements and has an obligation to pay minimum annual royalties (in the tens of thousands of U.S. dollars prior to licensed product approval and thereafter at a level of 50% of running royalties in the previous year), milestone payments and a low single-digit running royalty payable on the net selling price of each licensed product. The upfront payment made in 2012 was expensed to research and development when incurred. Subsequent milestone payments have been recognized as an intangible asset due to the technology having alternative future use in research and development projects at the time of the payment. The minimum annual royalties have been expensed as incurred.

On June 16, 2016, the Company entered into a supply agreement with ThermoFisher for the supply of the Dynabeads® CD3/CD28 technology. The Dynabeads® CD3/CD28 technology is designed to isolate, activate and expand human T-cells, and is being used in the manufacturing of the Company's affinity enhanced T-cell therapies. The supply agreement runs until December 31, 2025. Under the supply agreement the Company is required to purchase its requirements for CD3/CD28 magnetic bead product exclusively from ThermoFisher for a period of 5 years and there are also minimum purchasing obligations, which are included within 'Purchase commitments for clinical materials, clinical trials and contract manufacturing' set forth above. ThermoFisher has the right to terminate the supply agreement for material breach or insolvency.

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Note 10 — Share-based compensation

The following table shows the total share-based compensation expense included in the unaudited consolidated statements of operations (thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016

Research and development	$ 1,683	$ 1,170	$ 3,912	$ 3,438
General and administrative	1,516	1,116	4,044	3,387
	$ 3,199	**$ 2,286**	**$ 7,956**	**$ 6,825**

There were 8,756,211 and 2,414,576 options over ordinary shares granted in the three months ended September 30, 2017 and 2016, respectively, with a weighted average fair value of $0.34 and $0.74, respectively. There were 28,959,363 and 17,758,373 options over ordinary shares granted in the nine months ended September 30, 2017 and 2016, respectively, with a weighted average fair value of $0.34 and $0.74, respectively. There were 74,145,505 and 49,237,290 share options outstanding at September 30, 2017 and December 31, 2016.

At September 30, 2017, there were 3,224,600 share options granted to nonemployees outstanding. Share-based compensation expense relating to non-employee options was an expense of $297,000 and a benefit of $24,000 in the three months ended September 30, 2017 and 2016, respectively, and an expense of $401,000 and a benefit of $139,000 in the nine months ended September 30, 2017 and 2016, respectively.

Note 11 — Shareholders' equity

On March 27, 2017, the Company completed an underwritten public offering of the Company's American Depositary Shares ("ADSs"). The Company sold 15,700,223 ADSs (representing 94,201,338 ordinary shares) at a price to the public of $4.20 per ADS. The net proceeds were $61,397,000 after deducting offering expenses of $4,544,000.

On April 10, 2017, the Company completed a registered direct offering of the Company's ADSs following its entry into a definitive agreement with Matrix Capital Management Company, LP. The Company sold 7,000,000 ADSs (representing to 42,000,000 ordinary shares) at a price of $6.00 per ADS. The net proceeds were $41,770,000 after deducting offering expenses of $230,000.

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Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The statements in this discussion regarding industry outlook, our expectations regarding our future performance, liquidity and capital resources and other non-historical statements are forward-looking statements. These forward-looking statements are subject to numerous risks and uncertainties, including, but not limited to, the risks and uncertainties described in "Risk Factors" and "Forward-Looking Statements" in this Quarterly Report. Our actual results may differ materially from those contained in or implied by any forward-looking statements.

The following discussion should be read in conjunction with the unaudited consolidated financial statements and accompanying notes included elsewhere in this report and the Company's consolidated financial statements and accompanying notes included within our Annual Report.

We are a clinical-stage biopharmaceutical company focused on novel cancer immunotherapy products based on our proprietary SPEAR T-cell platform. We have developed a comprehensive proprietary platform that enables us to identify cancer targets, find and genetically engineer TCRs, and produce TCR therapeutic candidates for administration to patients. We engineer TCRs to increase their affinity to cancer specific peptides in order to destroy cancer cells in patients.

Update on Clinical Pipeline Progress

We have Phase 1/2 clinical trials ongoing with our wholly-owned MAGE-A10, MAGE-A4 and AFP SPEAR T-cells in a total of eight tumor types including non-small cell lung cancer ("NSCLC"), head and neck cancer, ovarian, urothelial, esophageal and gastric cancers.

GSK exercised its option to take an exclusive license to the NY-ESO SPEAR T-cell program on September 7, 2017 and we are in the process of transitioning the clinical program to GSK.

Our MAGE-A10 SPEAR T-cell Therapy

Clinical trials are ongoing in NSCLC, urothelial, melanoma and head and neck cancers.

- ***NSCLC*:** Enrollment of patients into this program has been challenging but multiple sites are active in the United States and Canada and a site has been initiated in the United Kingdom.
- ***3-tumor trial:*** Multiple trial sites are now active in the United States and Canada.

Initial data from our MAGE-A10 SPEAR T-cell is expected during 2018.

Our AFP SPEAR T-cell Therapy

We have a Phase 1, open label, dose escalation study designed to evaluate the safety and anti-tumor activity of our alpha fetoprotein ("AFP") therapeutic candidate in hepatocellular carcinoma ("HCC") ongoing in the United States. The trial will include a dose escalation and expansion of a tolerable dose to explore initial evidence of anti-tumor activity.

Our MAGE-A4 SPEAR T-cell Therapy

The IND for a clinical trial of our MAGE-A4 SPEAR T-cell in multiple solid tumors was opened at the start of 2017. Multiple sites in the United States are now active and recruiting. Initial data is anticipated in 2018.

NY-ESO SPEAR T-cell Therapy

The NY-ESO SPEAR T-cell is currently in clinical trials in the United States. On September 7, 2017, we announced that GSK had exercised its option under the GSK Agreement to exclusively license the right to research, develop and commercialize the NY-ESO SPEAR T-cell.

Following exercise of this option by GSK, we are transitioning the NY-ESO SPEAR T-cell program to GSK, with full transition anticipated during 2018.

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- *Synovial Sarcoma*: Enrollment in the synovial sarcoma pilot trial will continue in cohorts 2 and 4 and the program will transition to GSK during 2018. The trial is ongoing in the United States.

- *MRCLS*: Enrollment in this program will continue and the program will transition to GSK during 2018. The trial is ongoing in the United States.

- *Ovarian program:* Enrollment in the ovarian program will cease and GSK will assume responsibility for any further development for this indication and any long term follow up for patients previously enrolled and treated in the program.

- *Myeloma program:* Initiation and activation of sites in the ongoing multiple myeloma combination study with Merck's anti-programmed death-1 ("PD-1") inhibitor, KEYTRUDA® (pembrolizumab) will continue as previously planned. The study will transition to GSK during 2018.

- *NSCLC program*: Enrollment in the NSCLC study will be closed and GSK will assume responsibility for any further development for this indication. Any patients enrolled in the NSCLC study will continue to be treated and followed for safety, efficacy and long term follow up.

The conduct and timing of any pivotal trial using the NY-ESO SPEAR T-cell will be the responsibility of GSK following exercise of its option over the NY-ESO SPEAR T-cell program.

The NY-ESO SPEAR T-cell has shown promising initial results in clinical trials with responses observed in all ongoing synovial sarcoma cohorts. Response rates of 50% in cohorts 1 and 4 were reported at the American Society of Clinical Oncology (ASCO) meeting on June 5, 2017 and updated survival analysis for cohort 1 showed a median predicted overall survival of 120 weeks. Updated response rates at day 100 post autologous stem cell transplant ("ASCT") in multiple myeloma will be presented at the American Society of Hematology (ASH) annual meeting in December 2017. The NY-ESO SPEAR T-cell continues to show a promising tolerability profile to date in all clinical trials with no events of seizure, cerebral edema or encephalopathy observed. The most common (>15%) adverse events in these subjects considered by investigators to be at least possibly related to the NY-ESO SPEAR T-cells include: fever, diarrhea, fatigue, rash, nausea, anemia, dyspnea, cytokine release syndrome ("CRS"), lymphopenia, leukopenia, cough, ALT increase, AST increase, hypotension, sinus tachycardia, neutropenia, and thrombocytopenia. For further details on adverse events please see Part II — Item 1A Risk Factors — "Our SPEAR T-cells may have undesirable side effects or have other properties that could halt their clinical development, prevent regulatory approval, limit their commercial potential or otherwise result in significant negative consequences" of our Quarterly Report.

Significant Events in the Three Months Ended September 30, 2017

GSK Option Exercise

On September 7, 2017, we announced that GSK exercised its option under the GSK Agreement signed in 2014 to exclusively license the right to research, develop, and commercialize our NY-ESO SPEAR T-cell program. As a result of the option exercise and completion of the transition program, we will receive up to £48 million (approximately $61 million) from GSK over the course of the transition period, of which £23.9 million (approximately $28.5 million) has been received in September 2017. This includes development milestones of up to £18 million (approximately $23 million) and the option payment of £30 million (approximately $38 million), which also allows GSK to nominate two additional targets following completion of the transition. Successful continuation of development and subsequent commercialization of NY-ESO would trigger additional payments for development milestones, tiered sales milestones, and mid-single to low double-digit royalties on worldwide net sales.

The GSK Agreement was announced in June 2014 and was for up to five programs including the NY-ESO SPEAR T-cell program. The terms of the GSK Agreement were expanded in February 2016 to accelerate development of NY-ESO SPEAR T-cell therapy toward registration trials in synovial sarcoma, to explore development in MRCLS and to enable combination studies. In January 2017, GSK nominated PRAME as a second target and, as a consequence of GSK's recent option exercise for the NY-ESO SPEAR T-cell program, GSK will have the right to nominate its third and fourth targets. The GSK Agreement excludes GSK's ability to nominate any targets on which work is already under way, including our wholly owned MAGE-A10, MAGE-A4, and AFP clinical programs and our active preclinical pipeline.

We will work with GSK to transition the NY-ESO SPEAR T-cell development program to GSK during 2018. After the transition, GSK will assume sponsor responsibility for all NY-ESO SPEAR T-cell related activities.

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Financial Operations Overview

Revenue

Revenue represents recognized income from the GSK Agreement which requires the Company to provide multiple deliverables to GSK. The GSK Agreement related to up to five target programs, the first of which was the NY-ESO SPEAR T-cell program. On September 7, 2017 and by way of the Amendment, GSK exercised its option to obtain an exclusive license to research, develop, and commercialize the Company's NY-ESO SPEAR T-cell therapy program. The Amendment also specifies the activities required to transition the NY-ESO SPEAR T-cell program to GSK. Transition of the program is targeted for completion during 2018. After the transition, GSK will assume responsibility for the whole NY-ESO SPEAR T-cell program.

The exercise of the NY-ESO option and the Amendment has been accounted for as a modification of an existing arrangement. As of September 7, 2017, we have accounted for the modified arrangement as a multiple-element arrangement consisting of the following deliverables (i) an exclusive license to research, develop, and commercialize the Company's NY-ESO SPEAR T-cell therapy program, (ii) the transitional development program for the NY-ESO Spear T-cell during the transition period, (iii) additional transitional services, when and if required by GSK and reimbursed when performed and (iv) the development of, and option to obtain an exclusive license to a second target, PRAME. As provided under the GSK Agreement, GSK continues to have the right to nominate three additional target peptides, excluding any targets on which work is already under way. This is not considered to be a deliverable at September 7, 2017, because it represents a substantive option not priced at a significant and incremental discount. After the transition, GSK will assume responsibility for all NY-ESO-related activities.

Upon modification, the non-contingent arrangement consideration was allocated between the separate deliverables using the Company's best estimate of the relative selling price. In determining the best estimate, the Company considered internal pricing objectives it used in negotiating the GSK Agreement and the recent amendment, together with internal data regarding the cost and margin of providing services for each deliverable taking into account the different stage of development of each development program.

The Company received an upfront payment of $42.1 million in June 2014 and has achieved non-substantive development milestones of $49.3 million, of which $10.3 million were achieved in the nine months ended September 30, 2017. Upon exercise of the NY-ESO option, the Company is entitled to receive an exercise fee of £30 million (approximately $38 million), of which $26.6 million was received in September 2017 and the remainder is payable upon successful completion of transition activities. The Company is entitled to further non-substantive milestone payments based on the achievement of development milestones by the Company relating to the NY-ESO SPEAR T-cell program. The Company will also be entitled to further development and commercialization milestone payments based on achievement of specified milestones by GSK. In addition to the development milestones, the Company is entitled to royalties from GSK on all GSK sales of TCR therapeutic products licensed under the GSK Agreement, varying between a mid-single-digit percentage and a low-double-digit percentage of net sales. No royalties have been received as of September 30, 2017. Sales milestones also apply once any TCR therapeutic covered by the GSK Agreement is on the market. In addition to the development milestone payments due in relation to the NY-ESO

SPEAR T-cell program, the Company is also entitled to non-substantive milestone payments based on achievement of development milestones under the PRAME SPEAR T-cell program, the second target program nominated by GSK under the GSK Agreement.

The revenue allocated to the exclusive license to research, develop, and commercialize the Company's NY-ESO SPEAR T-cell therapy program will be recognized as revenue upon commencement of the exclusive license, which occurs on completion of defined transition activities and transition of sponsorship of clinical programs to GSK. The revenue allocated to the transitional development program for the NY-ESO Spear T-cells and the development of, and option to obtain an exclusive license to a second target, PRAME is recognized using the proportional performance model in revenue systematically over the period in which the Company is delivering services under the GSK Agreement, which is determined to be the estimated duration of the development activities to be performed by Adaptimmune under the GSK Agreement.

We regularly review and monitor the performance of the GSK Agreement to determine the period over which we will be delivering services to GSK and when a change in facts or circumstances occurs, the estimated is adjusted and the revenue is recognized based on the revised estimate. The difference between the cumulative revenue recognized based on the previous estimate and the revenue recognized based on the revised estimate is recognized as an adjustment to revenue in the period in which the change in estimate occurs. Upon the exercise of the NY-ESO Option, the estimate of the period over which we will be delivering services to GSK in relation to the NY-ESO Spear T-cell development program has significantly reduced, resulting in an increase in revenue amortization of $17.5 million in September 2017.

The GSK Agreement is effective until all payment obligations expire. The agreement can also be terminated on a collaboration program-by-collaboration program basis by GSK for lack of feasibility or inability to meet certain agreed requirements. Both parties

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have rights to terminate the GSK Agreement for material breach upon 60 days' written notice or immediately upon insolvency of the other party. GSK has additional rights to terminate either the GSK Agreement or any specific license or collaboration program on provision of 60 days' notice to us. The Company also has rights to terminate any license where GSK ceases development or withdraws any licensed TCR therapeutic in specified circumstances.

In May 2014, the FASB issued guidance which requires a new approach to revenue recognition effective for the fiscal year beginning January 1, 2018, including interim reporting periods within that reporting period. See Note 2(h) to the consolidated financial statements for further information.

Research and Development Expenses

Research and development expenses consist principally of the following:

- salaries for research and development staff and related expenses, including benefits;
- costs for production of preclinical compounds and drug substances by contract manufacturers;
- fees and other costs paid to contract research organizations in connection with additional preclinical testing and the performance of clinical trials;
- costs associated with the development of a process to manufacture and supply our lentiviral vector and SPEAR T-cells for use in clinical trials;
- costs to develop manufacturing capability at our U.S. facility for manufacture of SPEAR T-cells for use in clinical trials;
- costs relating to facilities, materials and equipment used in research and development;
- costs of acquired or in-licensed research and development which does not have alternative future use;
- amortization and depreciation of property, plant and equipment and intangible assets used to develop our SPEAR T-cells; and
- share-based compensation expenses;

offset by:

- reimbursements from government grants; and
- reimbursable tax and expenditure credits from the U.K. government.

Research and development expenditures are expensed as incurred.

Our research and development expenses may vary substantially from period to period based on the timing of our research and development activities, which depends upon the timing of initiation of clinical trials and the rate of enrollment of patients in clinical trials. The duration, costs, and timing of clinical trials and development of our SPEAR T-cells will depend on a variety of factors, including:

- the scope, rate of progress, and expense of our ongoing as well as any additional clinical trials and other research and development activities;
- uncertainties in clinical trial enrollment rates;
- future clinical trial results;
- significant and changing government regulation;
- the timing and receipt of any regulatory approvals; and
- supply and manufacture of lentiviral vector and SPEAR T-cells for clinical trials.

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For further detail please see Part II — Item 1A Risk Factors — Risks Related to the Development of our SPEAR T-cells of our Quarterly Report.

A change in the outcome of any of these variables may significantly change the costs and timing associated with the development of that SPEAR T cell. For example, if

the U.S. Food and Drug Administration ("FDA"), or another regulatory authority, requires us to conduct clinical trials beyond those that we currently anticipate will be required for regulatory approval, or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development.

General and Administrative Expenses

Our general and administrative expenses consist principally of:

- salaries for employees other than research and development staff, including benefits;
- business development expenses, including travel expenses;
- professional fees for auditors, lawyers and other consulting expenses;
- costs of facilities, communication, and office expenses;
- information technology expenses;
- amortization and depreciation of property, plant and equipment and intangible assets not related to research and development activities; and
- share-based compensation expenses.

Other Income (Expense), net

Other income (expense), net comprises foreign exchange gains (losses). We are exposed to foreign exchange rate risk because we currently operate in the United Kingdom and United States. Our revenue from our GSK Agreement is denominated in pounds sterling and is generated by our U.K.-based subsidiary, which has a pounds sterling functional currency. As a result, these sales are subject to translation into U.S. Dollars when we consolidate our financial statements. Our expenses are generally denominated in the currency in which our operations are located, which are the United Kingdom and United States. However, our U.K.-based subsidiary incurs significant research and development costs in U.S. dollars and, to a lesser extent, Euros.

Our results of operations and cash flows will be subject to fluctuations due to changes in foreign currency exchange rates, which could harm our business in the future. We seek to minimize this exposure by maintaining currency cash balances at levels appropriate to meet foreseeable expenses in U.S. dollars and pounds sterling. To date, we have not used hedging contracts to manage exchange rate exposure, although we may do so in the future.

Taxation

We are subject to corporate taxation in the United Kingdom and the United States. Our income tax recognized represents the tax currently payable arising on taxable profits from our U.S. subsidiary, which is subject to U.S. federal corporate income tax of 34%. The U.S. subsidiary has been granted an exemption from certain state and local taxes, which we anticipate being in place for the next several years.

We incur losses in the United Kingdom. No deferred tax assets are recognized on our U.K. losses because there is currently no indication that we will make sufficient taxable profits to utilize these tax losses. Unsurrendered tax losses can be carried forward to be offset against future taxable profits. There are accumulated tax loss carry forwards in the United Kingdom amounting to $86.0 million at December 31, 2016. These tax losses do not expire. However, draft legislation has been published for inclusion in Finance Bill (No. 2) 2017 that would, if enacted, restrict the use of carried forward tax losses from April 1, 2017, such that they would not be available for offset against more than 50% of taxable profits in any accounting period (subject to a £5 million annual allowance).

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In the future, if we generate taxable income in the United Kingdom, we may benefit from the United Kingdom's "patent box" regime, which would allow certain profits attributable to revenues from patented products to be taxed at a rate that over time will be reduced to 10%. As we have many different patents covering our products, future upfront fees, milestone fees, product revenues, and royalties may be taxed at this favorably low tax rate.

VAT is charged on all qualifying goods and services by VAT-registered businesses. An amount of 20% of the value of the goods or services is added to all relevant sales invoices and is payable to the U.K. tax authorities. Similarly, VAT paid on purchase invoices paid by Adaptimmune Limited and Adaptimmune Therapeutics plc is reclaimable from the U.K. tax authorities.

Critical Accounting Policies and Significant Judgments and Estimates

The preparation of our unaudited condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities, and the revenues and expenses incurred during the reported periods. We base our estimates on historical experience and on various other factors that we believe are relevant under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. The accounting policies considered to be critical to the judgments and estimates used in the preparation of our financial statements are disclosed in the Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report. There has been no change in the accounting policies considered to be critical accounting judgments and estimates.

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Results of Operations

Comparison of Three Months Ended September 30, 2017 and 2016

The following table summarizes the results of our operations for the three months ended September 30, 2017 and 2016, together with the changes to those items (in thousands).

	Three months ended September 30,		
	2017	2016	Increase/decrease

Revenue	**$ 27,185**	**$ 2,416**	**$ 24,769**	**1025 %**
Research and development expenses	(24,034)	(15,610)	(8,424)	54 %
General and administrative expenses	(8,111)	(5,424)	(2,687)	50 %
Total operating expenses	**(32,145)**	**(21,034)**	**(11,111)**	**53 %**
Operating loss	**(4,960)**	**(18,618)**	**13,658**	**(73)%**
Interest income	713	289	424	147 %
Interest expense	(8)	—	(8)	N/A
Other income (expense), net	3,602	(61)	3,663	NM
Loss before income taxes	**(653)**	**(18,390)**	**17,737**	**(96)%**
Income taxes	(225)	(104)	(121)	116 %
Loss for the period	**$ (878)**	**$ (18,494)**	**$ 17,616**	**(95)%**

NM — Not meaningful

Revenue

Revenue increased by $24.8 million to $27.2 million in the three months ended September 30, 2017 compared to $2.4 million for the three months ended September 30, 2016.

We recognize non-contingent milestones earned under the GSK Agreement using a proportional performance method over an estimate of the period which we will be delivering services to GSK. When a milestone is achieved, the total non-contingent consideration, including the milestone, is recognized over the period we are delivering services to GSK, resulting in an adjustment to the cumulative revenue amortization in the period the milestone is achieved and higher revenue amortization in future periods. Any changes in the estimate of the period over which we are delivering services to GSK will also result in an adjustment to the cumulative revenue amortization in the period the estimate is revised.

On September 7, 2017, GSK exercised its option to the NY-ESO SPEAR T-cell program and further amended the GSK Agreement. The increase in revenue in the three months ended September 30, 2017 compared to the three months ended September 30, 2016 is due in part to the $9.1 million of milestone payments being achieved in the three months ended September 30, 2017 compared to $nil in the three months ended September 30, 2016. Furthermore, upon the exercise of the NY-ESO option, the estimate of the period over which we will be delivering services to GSK in relation to the NY-ESO SPEAR T-cell development program has significantly reduced, resulting in an increase in cumulative revenue amortization of $17.5 million in September 2017.

Future revenues will fluctuate depending on thetiming of achieving future development deliverables, which is difficult to predict. However, we expect the revenue for three months ended December 31, 2017 and future quarters will be lower than the three months ended September 30, 2017 because the revenue for the three months ended September 30, 2017 includes the impact of cumulative adjustments to revenue amortization for milestones achieved in the quarter and the change in estimate of the period over which we are recognizing revenue. However, revenue allocated to GSK's exclusive license to the NY-ESO T-cell therapy will be recognized upon transfer of sponsorship of the NY-ESO SPEAR T-cell clinical program to GSK which will result in higher revenues in the quarter in which that occurs.

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Research and Development Expenses

Research and development expenses increased by 54% to $24.0 million for the three months ended September 30, 2017 from $15.6 million for the three months ended September 30, 2016. Our research and development expenses comprise the following (in thousands):

	Three months ended September 30,			
	2017	2016	Increase/decrease	
Salaries, materials, equipment, depreciation of property, plant and equipment and other employee-related costs(1)	$ 12,371	$ 9,788	$ 2,583	26 %
Subcontracted expenditure	12,292	6,032	6,260	104 %
Share-based compensation expense	1,683	1,169	514	44 %
Payments for in-process research and development	685	—	685	N/A
Reimbursements for research and development tax and expenditure credits	(2,997)	(1,379)	(1,618)	117 %
	$ 24,034	**$ 15,610**	**$ 8,424**	**54 %**

(1) These costs are not analyzed by project since employees may be engaged in multiple projects at a time.

The net increase in our research and development expenses of $8.4 million for the three months ended September 30, 2017 compared to the same period in 2016 was primarily due to the following:

- an increase of $2.6 million in salaries, materials, equipment, depreciation of property, plant and equipment and other employee-related costs. The driver for these is the increase in the average number of employees engaged in research and development from 216 to 264;
- an increase of $6.3 million in subcontracted expenditures, including clinical trial expenses, contract research organization (CRO) costs and manufacturing expenses driven by increased recruitment in our clinical trials, initiation of clinical trials for MAGE-A4, MAGE-A10 and AFP, and an increase in process development relating to manufacturing;
- an increase of $0.5 million in share-based compensation expense for employee and nonemployee share options; and
- an increase of $0.7 million in payments made to Universal Cells for in-process research and development; and

offset by:

- an increase in reimbursements for research and development tax and expenditure credits of $1.6 million.

Our subcontracted costs for the three months ended September 30, 2017 were $12.3 million, compared to $6.0 million in the same period of 2016, of which $3.4 million related to our NY-ESO SPEAR T-cells, $2.0 million related to process development for our SPEAR T-cell platform and the remaining $6.9 million related to our internal

pipeline, including our MAGE-A10, MAGE-A4 and AFP SPEAR T-cells.

Our research and development expenses are highly dependent on the phases and progression of our research projects and therefore fluctuate from period to period. We anticipate that our research and development expenses will be higher in the year ended December 31, 2017 compared to the year ended December 31, 2016 and will continue to increase in the year ended December 31, 2018. The increase in research and development is due to an increase in expenditure on clinical trials as enrollment in our clinical trials progress and we also expect to increase the number of staff employed in our research and development departments in order to invest in our future pipeline of SPEAR T-cells, develop our platform and manage clinical trials and develop our manufacturing capabilities at our U.S. facility. This will significantly increase the related salaries and share-based compensation expenses, as well as require higher expenditures on facilities, materials and equipment.

The share-based compensation expense related to nonemployee option grants will fluctuate in future periods due to changes in the assumptions to the fair value calculation, which include the share price, interest rates, volatility and expected term. A 5% increase in the share price at September 30, 2017 would have increased the share-based compensation expense for nonemployee option grants in the three months ended September 30, 2017 by approximately $33,000.

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General and Administrative Expenses

General and administrative expenses increased by 50% to $8.1 million for the three months ended September 30, 2017 from $5.4 million in the same period in 2016.

The net increase of $2.7 million was primarily due to a $1.1 million increase in personnel costs and share-based compensation expense, due to the addition of key management and other professionals to support our growth, and an increase in costs associated with supporting and maintaining our IT infrastructure.

We expect that our general and administrative expenses will continue to increase as we continue to expand our operations.

Other Income (Expense), Net

Other income (expense), net was an income of $3.6 million for the three months ended September 30, 2017 compared to an expense of $61,000 for the three months ended September 30, 2016. Other income (expense), net primarily relates to unrealized foreign exchange gains and losses on cash and cash equivalents, intercompany loans and short-term deposits held in U.S. dollars by our U.K. subsidiary. Other income, net has increased primarily due to exchange rate fluctuations and lower cash balances because we invested approximately $80 million of cash and cash equivalents into marketable securities in the nine months ended September 30, 2017. The unrealized foreign exchange gains (losses) arising on marketable securities are recognized within Other Comprehensive Income.

Income taxes

Income taxes increased by 116% to $225,000 for the three months ended September 30, 2017 from $104,000 for the three months ended September 30, 2016. Income taxes arise in the United States and the increase in income taxes in the three months ended September 30, 2017 is due to an increase in the taxable profits in the United States compared to the same period of the prior year. We incur losses in the United Kingdom.

Comparison of Nine Months Ended September 30, 2017 and 2016

The following table summarizes the results of our operations for the nine months ended September 30, 2017 and 2016, together with the changes to those items (in thousands).

	Nine months ended September 30,			
	2017	2016	Increase/decrease	
Revenue	**$ 33,563**	**$ 5,662**	**$ 27,901**	**493 %**
Research and development expenses	(62,240)	(46,942)	(15,298)	33 %
General and administrative expenses	(22,284)	(16,863)	(5,421)	32 %
Total operating expenses	**(84,524)**	**(63,805)**	**(20,719)**	**32 %**
Operating loss	**(50,961)**	**(58,143)**	**7,182**	**(12)%**
Interest income	1,465	839	626	75 %
Interest expense	(14)	—	(14)	N/A
Other income, net	7,256	1,595	5,661	355 %
Loss before income taxes	**(42,254)**	**(55,709)**	**13,455**	**(24)%**
Income taxes	(621)	(456)	(165)	36 %
Loss for the period	**$ (42,875)**	**$ (56,165)**	**$ 13,290**	**(24)%**

Revenue

Revenue increased by 493% to $33.6 million for the nine months endedSeptember 30, 2017 compared to $5.7 million for the nine months ended September 30, 2016.

We recognize non-contingent milestones earned under the GSK Agreement using a proportional performance method over an estimate of the period which we will be delivering services to GSK. When a milestone is achieved, the total non-contingent consideration, including the milestone, is recognized over the period we are delivering services to GSK, resulting in an adjustment to

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the cumulative revenue amortization in the period the milestone is achieved and higher revenue amortization in future periods. Any changes in the estimate of the period over which we are delivering services to GSK will also result in an adjustment to the cumulative revenue amortization in the period the estimate is revised.

On September 7, 2017, GSK exercised the NY-ESO Option and amended the GSK Agreement. The increase in revenue in the nine months ended September 30, 2017 compared to the nine months ended September 30, 2016 is due in part to milestones of $10.3 million being achieved in the nine months ended September 30, 2017 compared to $nil in the nine months ended September 30, 2016. Furthermore, upon the exercise of the NY-ESO Option, the estimate of the period over which we will be delivering services to GSK in relation to the NY-ESO Spear T-Cell development program has significantly reduced, resulting in an increase in cumulative revenue amortization of $17.5 million in September 2017. The revenue is the nine months ended September 30, 2016 was also adversely impacted by a change in estimate, which reduced revenue in the nine months ended September 30, 2016 by $3.1 million.

Future revenues will fluctuate depending on thetiming of achieving future development deliverables, which is difficult to predict. However, we expect the revenue for three months ended December 31, 2017 and future quarter will be lower than the three months ended September 30, 2017 because the revenue for the three months ended September 30, 2017 includes the impact of cumulative adjustments to revenue amortization for milestones achieved in the quarter and the change in estimate of the period over which we are recognizing revenue. However, revenue allocated to GSK's exclusive license to the NY-ESO T-cell therapy will be recognized upon transfer of sponsorship of the NY-ESO SPEAR T-cell clinical program to GSK which will result in higher revenues in the quarter in which that occurs.

Research and Development Expenses

Research and development expenses increased by 33% to $62.2 million for the nine months ended September 30, 2017 from $46.9 million for the nine months ended September 30, 2016. Our research and development expenses comprise the following (in thousands):

	Nine months ended September 30,			
	2017	2016	Increase/decrease	
Salaries, materials, equipment, depreciation of property, plant and equipment and other employee-related costs(1)	$ 34,856	$ 30,197	$ 4,659	15%
Subcontracted expenditure	29,587	15,908	13,679	86%
Share-based compensation expense	3,913	3,438	475	14%
Payments for in-process research and development	1,186	3,000	(1,814)	(60)%
Reimbursements for research and development tax and expenditure credits	(7,302)	(5,601)	(1,701)	30%
	$ 62,240	**$ 46,942**	**$ 15,298**	**33%**

(1) These costs are not analyzed by project since employees may be engaged in multiple projects at a time.

The net increase in our research and development expenses of $15.3 million for the nine months ended September 30, 2017 compared to the same period in 2016 was primarily due to the following:

- an increase of $4.7 million in salaries, materials, equipment, depreciation of property, plant and equipment and other employee-related costs. The driver for these is the increase in the average number of employees engaged in research and development from 203 to 253;
- an increase of $13.7 million in subcontracted expenditures, including clinical trial expenses, initiation of clinical trials for MAGE-A4, MAGE-A10 and AFP, contract research organization (CRO) costs, and manufacturing expenses driven by increased recruitment in our clinical trials and an increase in process development relating to manufacturing;
- an increase of $0.5 million in share-based compensation expense; and

offset by:

- a $1.8 million decrease in payments made to Universal Cells for in-process research and development; and
- a $1.7 million increase in reimbursements for research and development tax and expenditure credits.

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Our subcontracted costs for the nine months ended September 30, 2017 were $29.6 million, compared to $15.9 million in the same period of 2016, of which $10.7 million related to our NY-ESO SPEAR T-cells, $7.7 million related to process development for our SPEAR T-cell platform, and the remaining $11.2 million related to other projects, including our MAGE-A10, MAGE-A4 and AFP SPEAR T-cells.

Our research and development expenses are highly dependent on the phases and progression of our research projects and therefore fluctuate from period to period. We anticipate that our research and development expenses will be higher in the year ended December 31, 2017 compared to the year ended December 31, 2016 and continue to increase in the year ended December 31, 2018, The increase in research and development is due to an increase in expenditure on clinical trials as enrollment in our clinical trials progress and we also expect to increase the number of staff employed in our research and development departments in order to invest in our future pipeline of SPEAR T-cells, develop our platform and manage clinical trials and develop our manufacturing capabilities at our U.S. facility. This will significantly increase the related salaries and share-based compensation expenses, as well as require higher expenditures on facilities, materials and equipment.

The share-based compensation expense related to nonemployee option grants will fluctuate in future periods due to changes in the assumptions to the fair value calculation, which include the share price, interest rates, volatility and expected term. A 5% increase in the share price at September 30, 2017 would have increased the share-based compensation expense for nonemployee option grants in the nine months ended September 30, 2017 by approximately $33,000.

General and Administrative Expenses

General and administrative expenses increased by 32% to $22.3 million for the nine months ended September 30, 2017 from $16.9 million in the same period in 2016.

The net increase of $5.4 million was primarily due to a $3.6 million increase in personnel costs and share-based compensation expense, due to the addition of key management and other professionals to support our growth, and an increase in costs associated with supporting and maintaining our IT infrastructure.

We expect that our general and administrative expenses will continue to increase as we continue to expand our operations.

Other Income, Net

Other income, net was $7.3 million for the nine months ended September 30, 2017 compared to $1.6 million for the nine months ended September 30, 2016. Other income (expense), net primarily relates to unrealized foreign exchange gains and losses on cash and cash equivalents, intercompany loans and short-term deposits held in U.S. dollars by our U.K. subsidiary. Other income, net has increased primarily due to exchange rate fluctuations and lower cash balances because we invested approximately $80.0 million of cash and cash equivalents into marketable securities in the nine months ended September 30, 2017. The unrealized foreign exchange gains (losses) arising on marketable securities are recognized within Other Comprehensive Income.

Income taxes

Income taxes increased by 36% to $621,000 for the nine months ended September 30, 2017 from $456,000 for the nine months ended September 30, 2016. Income

taxes arise in the United States. The increase in income taxes is due to an increase in the taxable profits in the United States as we expand our operations. We incur losses in the United Kingdom.

Liquidity and Capital Resources

Sources of Funds

Since our inception, we have incurred significant net losses and negative cash flows from operations. We financed our operations primarily through sales of equity securities, cash receipts under our GSK Agreement, government grants and research and development tax and expenditure credits. From inception through to September 30, 2017, we have raised:

- $410.8 million, net of issue costs, through the issuance of shares, including $176.0 million raised through our initial public offering in May 2015, $61.4 million raised through a follow-on public offering in March 2017 and $41.8 million raised through a registered direct offering in April 2017;

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- $118.1 million upfront fees, milestones and exercise fees under our GSK Agreement;
- $2.6 million of income in the form of government grants from the United Kingdom; and
- $11.6 million in the form of U.K. research and development tax credits and receipts from the U.K. RDEC Scheme.

We use a non-GAAP measure, Total Liquidity, which is defined as the total of cash and cash equivalents, short-term deposits and marketable securities, to evaluate the funds available to us in the near-term. A description of Total Liquidity and reconciliation to cash and cash equivalents, the most directly comparable U.S. GAAP measure, are provided below under “Non-GAAP measures”.

As of September 30, 2017, we had cash and cash equivalents of $145.3 million and Total Liquidity of $231.9 million. We believe that our Total Liquidity and income from GSK upon transition of the NY-ESO program will be sufficient to fund our operations, based upon our currently anticipated research and development activities and planned capital spending, through 2020.

Cash Flows

The following table summarizes the results of our cash flows for the nine months ended September 30, 2017 and 2016 (in thousands).

	Nine months ended September 30,	
	2017	2016
Net cash used in operating activities	$ (32,959)	$ (50,538)
Net cash (used in) provided by investing activities	(86,070)	796
Net cash provided by financing activities	103,568	—
Cash, cash equivalents and restricted cash	149,558	144,586

Operating Activities

Net cash used in operating activities decreased by $17.6 million to $33.0 million for the nine months ended September 30, 2017 from $50.5 million for the nine months ended September 30, 2016. The decrease in cash used in operations was primarily the result of receiving milestones payments and exercise fees from GSK of $34.9 million compared to $3.6 million in the nine months ended September 30, 2016 and the increase in research and development costs due to the ongoing advancement of our preclinical programs and clinical trials and an increase in general and administrative expenses due to the expansion of our operations.

Net cash used in operating activities of $33.0 million for the nine months ended September 30, 2017 comprised a net loss of $42.9 million offset by noncash items of $5.3 million and a net cash inflow of $4.6 million from changes in operating assets and liabilities,. The noncash items consisted primarily of depreciation expense on plant and equipment of $3.4 million and share-based compensation expense of $8.0 million, offset by unrealized foreign exchange gains of $6.9 million.

Investing Activities

Net cash used in investing activities of $86.1 million for the nine months ended September 30, 2017 and net cash provided by investing activities of $0.8 million for the nine months ended September 30, 2016, included:

- purchases of property and equipment of $22.8 million and $4.8 million for the nine months ended September 30, 2017 and 2016, respectively, which predominately related to the expansion of our laboratory facilities in the United Kingdom and the United States, including establishing our manufacturing capabilities;
- acquisition of intangibles of $0.3 million and $1.0 million for the nine months ended September 30, 2017 and 2016, respectively;
- cash outflows from investment in marketable securities of $93.2 million, net of cash inflows from maturity or redemption of marketable securities of $7.0 million for the nine months ended September 30, 2017;
- investment in short-term cash deposits with maturities greater than three months but less than 12 months of $18.0 million and $42.8 million for the nine months ended September 30, 2017 and 2016, respectively;

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- cash inflows from maturity of short-term deposits of $40.6 million and $49.5 million for the nine months ended September 30, 2017 and 2016, respectively; and
- proceeds from sale of property, plant and equipment of $0.6 million for the nine months ended September 30, 2017.

Financing Activities

Net cash from financing activities was $103.6 million and $nil for the nine months ended September 30, 2017 and 2016, respectively. Net cash from financing activities for the nine months ended September 30, 2017 consisted primarily of net proceeds from a follow-on public offering of ADSs of $61.4 million in March 2017 and net proceeds of $41.8 million from a registered direct offering in April 2017.

Non-GAAP Measures

Total Liquidity (a non-GAAP financial measure)

Total Liquidity (a non-GAAP financial measure) is the total of cash and cash equivalents, short-term deposits and marketable securities. Each of these components appears in the consolidated balance sheet. The U.S. GAAP financial measure most directly comparable to Total Liquidity is cash and cash equivalents as reported in the consolidated financial statements, which reconciles to Total Liquidity as follows (in thousands):

	September 30, 2017	December 31, 2016
Cash and cash equivalents	$ 145,326	$ 158,779
Short-term deposits	—	22,694
Marketable securities	86,532	—
Total Liquidity	**$ 231,858**	**$ 181,473**

We believe that the presentation of Total Liquidity provides useful information to investors because management reviews Total Liquidity as part of its management of overall liquidity, financial flexibility, capital structure and leverage. As of September 30, 2017, we have invested $86.5 million in marketable securities. The definition of Total Liquidity has been amended to include marketable securities, which are highly-liquid and available to use in our current operations.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Contractual Obligations

The following table summarizes our contractual commitments and obligations as of September 30, 2017 (in thousands):

	Payments due by period				
	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Operating lease obligations(1)(2)	$ 33,840	$ 2,596	$ 7,531	$ 7,704	$ 16,009
Purchase obligations(3)	75,322	35,245	21,364	17,535	1,178
Total contractual cash obligations	**$ 109,162**	**$ 37,841**	**$ 28,895**	**$ 25,239**	**$ 17,187**

(1) As of September 30, 2017, operating lease obligations primarily consists of minimum lease payments under non-cancellable leases for laboratory, manufacturing and office property in Oxfordshire, U.K. and Philadelphia, U.S.

(2) In May 2017, we entered into an agreement for the lease of a building at Milton Park, Oxfordshire, U.K. The lease term expires on October 23, 2041, with termination options exercisable by us on the fifth anniversary of the lease commencement date and at approximately five yearly intervals thereafter. The related lease commitments are included in the table above.

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(3) Purchase obligations include signed orders for capital equipment, clinical materials, clinical trial expenses and contract manufacturing, which have been committed but not yet received, committed funding under the MD Anderson strategic alliance and costs relating to the development of our manufacturing capability in Philadelphia, U.S. The amount and timing of the payments for clinical materials, clinical trial expenses and contract manufacturing may vary depending on the rate of progress of development and clinical trial enrollment rates.

Purchase obligations

On September 26, 2016, we announced that we had entered into a multi-year strategic alliance with MD Anderson designed to expedite the development of T-cell therapies for multiple types of cancer. We and MD Anderson are collaborating on a number of studies including clinical and preclinical development of our SPEAR T-cell therapies targeting NY-ESO and MAGE-A10 and we will collaborate on future clinical stage first and second generation SPEAR T-cell therapies such as MAGE-A4 across a number of cancers, including bladder, lung, ovarian, head and neck, melanoma, synovial sarcoma, esophageal and gastric cancers. Under the terms of the agreement, we have committed at least $19,644,000 to fund studies. We made an upfront payment of $3,412,000 to MD Anderson in the nine months ended September 30, 2017 and are obligated to make payments to MD Anderson as certain milestones are achieved. Payment of this funding is contingent on mutual agreement to study orders in order for any study to be included under the alliance and the performance of set milestones by MD Anderson. The timing and amount of future payments is uncertain. These milestones are included within ‘Purchase obligations’ above.

On June 16, 2016, we entered into a supply agreement with ThermoFisher for the supply of the Dynabeads® CD3/CD28 technology. The Dynabeads® CD3/CD28 technology is designed to isolate, activate and expand human T-cells, and is being used in the manufacturing of our affinity enhanced T-cell therapies. The supply agreement runs until December 31, 2025. Under the supply agreement, we are required to purchase our requirements for CD3/CD28 magnetic bead product exclusively from ThermoFisher for a period of five years and there are also minimum purchasing obligations (which have been included in the purchase obligations above). ThermoFisher has the right to terminate the supply agreement for material breach or insolvency.

Other obligations

On November 25, 2015, we entered into a Research Collaboration and License Agreement relating to gene editing and HLA-engineering technology with Universal Cells. We paid an upfront license fee of $2.5 million to Universal Cells. A milestone payment of $3.0 million was made in February 2016 and further milestone payments of $0.8 million in 2017. We are obligated to make further payments of up to $43.5 million if certain development and product milestones are achieved. Universal Cells would also receive a profit-share payment for the first product, and royalties on sales of other products utilizing its technology. Future payments are not reflected in the table above because the timing of the payments is uncertain.

In 2012, we entered into a series of license and sub-license agreements with Life Technologies Corporation, part of ThermoFisher that provide us with a field-based exclusive license under certain intellectual property rights owned or controlled by ThermoFisher. We paid upfront license fees of $1.0 million relating to the license and sublicense agreements and has an obligation to pay minimum annual royalties (in the tens of thousands of U.S. dollars prior to licensed product approval and thereafter at a

level of 50% of running royalties in the previous year), milestone payments and a low single-digit running royalty payable on the net selling price of each licensed product. Future payments are not reflected in the table above because the timing and amount of the payments are uncertain.

Safe Harbor

See the section titled "Information Regarding Forward-Looking Statements" at the beginning of this Quarterly Report.

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Item 3. Quantitative and Qualitative Disclosures about Market Risk.

We are exposed to market risks in the ordinary course of our business, which are principally limited to interest rate fluctuations, foreign currency exchange rate fluctuations, particularly between pound sterling and U.S. dollar, and credit risk. These risks are managed by maintaining an appropriate mix of cash deposits and securities in various currencies, placed with a variety of financial institutions for varying periods according to expected liquidity requirements.

As of September 30, 2017, we have invested $86.5 million in marketable securities, with the aim of diversifying our investments and reducing credit risks. We have not entered into investments for trading or speculative purposes.

Interest Rate Risk

Our surplus cash and cash equivalents are invested in interest-bearing savings, money market funds, corporate debt securities and commercial paper from time to time. Our investments in corporate debt securities are subject to fixed interest rates. Our exposure to interest rate sensitivity is impacted by changes in the underlying U.K. and U.S. bank interest rates and the fair market value of our corporate debt securities will fall in value if market interest rates increase. We do not believe an immediate one percentage point change in interest rates would have a material effect on the fair market value of our portfolio, and therefore we do not expect our operating results or cash flows to be significantly affected by changes in market interest rates.

Currency Risk

We are exposed to foreign exchange rate risk because we currently operate in the United Kingdom and the United States. Our revenue from the GSK Agreement is denominated in pounds sterling and is generated by our U.K.-based subsidiary, which has a pounds sterling functional currency. As a result, these sales are subject to translation into U.S. Dollars when we consolidate our financial statements. Our expenses are generally denominated in the currency in which our operations are located, which are the United Kingdom and the United States. However, our U.K.-based subsidiary incurs significant research and development costs in U.S. dollars and, to a lesser extent, Euros.

The results of operations and cash flows will be subject to fluctuations due to changes in foreign currency exchange rates, which could harm our business in the future. We seek to minimize this exposure by maintaining currency cash balances at levels appropriate to meet foreseeable expenses in U.S. dollars and pounds sterling. To date, we have not used forward exchange contracts or other currency hedging products to manage our exchange rate exposure, although we may do so in the future. The exchange rate as of September 30, 2017, the last business day of the reporting period, was £1.00 to $1.34.

Credit Risk

Our cash and cash equivalents are held with multiple banks and we monitor the credit rating of those banks. Our investments in corporate debt securities and commercial paper are subject to credit risk. Our investment policy limits investments to certain types of instruments, such as money market instruments, corporate debt securities and commercial paper, places restrictions on maturities and concentration by type and issuer and specifies the minimum credit ratings for all investments and the average credit quality of the portfolio.

Trade receivables were $4.1 million and $1.5 million as of September 30, 2017 and December 31, 2016. Trade receivables arise in relation to the GSK Agreement. We have been transacting with GSK since 2014, during which time no impairment losses have been recognized. There are no amounts which are past due as of September 30, 2017.

Commodity Price Risk

We are exposed to commodity price risk as a result of our operations. However, given the size of our operations, the costs of managing exposure to commodity price risk exceed any potential benefits. We will revisit the appropriateness of this policy should our operations change in size or nature. We have no exposure to equity securities price risk as we hold no listed or other equity investments.

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Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e)) under the Securities and Exchange Act of 1934, as amended ("Exchange Act") as of September 30, 2017. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of September 30, 2017, our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our Chief Executive and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the quarter ended September 30, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings.

As of September 30, 2017, we were not a party to any material legal proceedings.

Item 1A. Risk Factors.

Our business has significant risks. You should carefully consider the following risk factors as well as all other information contained in this Quarterly Report, including our condensed consolidated financial statements and the related notes, before making an investment decision regarding our securities. The risks and uncertainties described below are those significant risk factors currently known and specific to us that we believe are relevant to our business, results of operations and financial condition. Additional risks and uncertainties not currently known to us or that we now deem immaterial may also impair our business, results of operations and financial condition.

Risks Related to Our Financial Condition and Capital Requirements

We are a clinical-stage biopharmaceutical company with no commercial products and prediction of future performance is very difficult.

We are a clinical-stage biopharmaceutical company focused on novel cancer immunotherapy products. We have no products or therapeutics approved for commercial sale and have not generated any revenue from product supplies or royalties. Our therapeutic candidates are based on engineered TCRs and are new and largely unproven. Our limited operating history, particularly in light of the rapidly evolving cancer immunotherapy field, may make it difficult to evaluate our current business and predict our future performance. Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate effect or an acceptable safety profile, gain regulatory approval and become commercially viable. Our inability to address these risks successfully would have a materially adverse effect on our business and prospects.

We have incurred net losses every year since our inception and expect to continue to incur net losses in the future.

We have generated losses since our inception in 2008, during which time we have devoted substantially all of our resources to research and development efforts relating to our SPEAR T-cells, including engaging in activities to manufacture and supply our SPEAR T-cells for clinical trials in compliance with current good manufacturing practice, or cGMP, conducting clinical trials of our SPEAR T-cells, providing general and administrative support for these operations and protecting our intellectual property. We do not have any products approved for sale and have not generated any revenue from product supplies or royalties. Based on our current plans, we do not expect to generate product or royalty revenues unless and until we obtain marketing approval for, and commercialize, any of our SPEAR T-cells.

For the nine months ended September 30, 2017, year ended December 31, 2016, six months ended December 31, 2015 and the years ended June 30, 2015 and 2014, we incurred net losses of $42.9 million, $71.6 million, $23.0 million, $22.1 million, and $11.6 million, respectively. As of September 30, 2017, we had accumulated losses of $204.4 million. We expect to continue incurring significant losses as we continue with our research and development programs and to incur general and administrative costs associated with our operations. The extent of funding required to develop our product candidates is difficult to estimate given the novel nature of our SPEAR T-cells and their un-proven route to market. Our profitability is dependent upon the successful development, approval, and commercialization of our SPEAR T-cells, successfully achieving GSK milestones and achieving a level of revenues adequate to support our cost structure. We may never achieve profitability, and unless and until we do, we will continue to need to raise additional cash.

We have never generated any revenue from sales of our SPEAR T-cells and our ability to generate revenue from sales of our SPEAR T-cells and become profitable depends significantly on our success in a number of factors.

We have no SPEAR T-cells approved for commercial sale, have not generated any revenue from sales of our SPEAR T-cells, and do not anticipate generating any revenue from sales of our SPEAR T-cells until some time after we receive regulatory approval, if at all, for the commercial sale of a SPEAR T-cell. We intend to fund future operations through milestone payments under our collaboration and license agreement with GSK and through additional equity financings or other third party collaborations. Our ability to generate revenue and achieve profitability depends on our success in many factors, including:

- completing preclinical development and advancing our SPEAR T-cells to clinic;
- delivering on the clinical development strategy for our SPEAR T-cells;
- progressing our clinical trials within predicted timeframes and without any substantial delays, for example as may be caused by delays in patient recruitment, regulatory requirements to hold or suspend any clinical trials or delays in obtaining approvals required to conduct clinical trials;
- demonstrating a favorable benefit (efficacy parameters): risk (safety) for our SPEAR T-cells that translate into a differentiated product of value for patients;
- obtaining data from clinical trials which are ongoing for SPEAR T-cells other than the NY-ESO SPEAR T-cell;
- obtaining regulatory approvals and marketing authorizations for our SPEAR T-cells for which we complete clinical trials;
- progressing our clinical trials within predicted timeframes and without any substantial delays, for example as may be caused by delays in patient recruitment, regulatory requirements to hold or suspend any clinical trials or delays in obtaining approvals required to conduct clinical trials;
- developing sustainable and scalable manufacturing and supply processes for our SPEAR T-cells, including establishing and maintaining commercially viable supply relationships with third parties and establishing our own commercial manufacturing capabilities and infrastructure;
- launching and commercializing SPEAR T-cells for which we obtain regulatory approvals and marketing authorizations, either directly or with a collaborator or distributor;
- obtaining market acceptance, pricing and reimbursement of our SPEAR T-cells as viable treatment options;
- addressing any competing technological and market developments;
- identifying, assessing, acquiring and/or developing new SPEAR T-cells;
- maintaining, protecting, and expanding our portfolio of intellectual property rights, including patents, trade secrets and know-how; and
- attracting, hiring and retaining qualified personnel.

Even if one or more of our SPEAR T-cells is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved SPEAR T-cell. Our expenses could increase beyond expectations if the FDA or any other regulatory agency requires changes to our manufacturing processes or assays, or for us to perform preclinical programs and clinical or other types of trials in addition to those that we currently anticipate. If we are successful in obtaining regulatory approvals to market one or more of our SPEAR T-cells, our revenue will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval, the accepted price for the SPEAR T-cell, the ability to get reimbursement at any price, and whether we own the commercial rights for that territory. If the number of our addressable disease patients is not as significant as we estimate, the indication approved by regulatory authorities is narrower than we expect, or the reasonably accepted population for treatment is narrowed by competition, physician choice or treatment guidelines, we may not generate significant revenue from sales or supplies of such SPEAR T-cells, even if approved. If we are not able to generate revenue from the sale of any approved SPEAR T-cells, we may never become profitable.

If we fail to obtain additional financing, we may be unable to complete the development and commercialization of our SPEAR T-cells.

Our operations have required substantial amounts of cash since inception. We expect to continue to spend substantial amounts to continue the development of our SPEAR T-cells, including future clinical trials. If we receive approval for any of our SPEAR T-cells, we will require significant additional amounts in order to launch and commercialize these therapeutic candidates.

As of September 30, 2017, we had $145.3 million of cash and cash equivalents and $86.5 million of marketable securities. We expect to use these funds to advance and accelerate the clinical development of our MAGE-A10, MAGE-A4 and AFP SPEAR T-cells, to further develop and enhance our manufacturing capabilities and secure a commercially viable manufacturing platform for all of our SPEAR T-cells, to advance additional SPEAR T-cells into preclinical testing and progress such SPEAR T-cells through to clinical trials as quickly as possible and to fund working capital, including other general corporate purposes. We believe that such proceeds, our existing cash, and cash equivalents, short-term deposits and marketable securities together with milestones payments to us under the GSK Agreement will be sufficient to fund our operations for the foreseeable future, including for at least the next 12 months. However, changing circumstances beyond our control, including changes to the scope and timing of the programs under the GSK collaboration, may cause us to increase our spending significantly faster than we currently anticipate. We may require additional capital for the further development and commercialization of our SPEAR T-cells and may need to raise additional funds sooner if we choose to expand more rapidly than we presently anticipate.

We cannot be certain that additional funding will be available on acceptable terms, or at all. We have no committed source of additional capital and if we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of our SPEAR T-cells or other research and development initiatives. Our license and supply agreements may also be terminated if we are unable to meet the payment obligations under these agreements. We could be required to seek collaborators for our SPEAR T-cells at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available or relinquish or license on unfavorable terms our rights to our SPEAR T-cells in markets where we otherwise would seek to pursue development or commercialization ourselves. Any of the above events could significantly harm our business, prospects, financial condition and results of operations and cause the price of our American Depositary Shares, or ADSs, to decline.

Risks Related to the Development of Our SPEAR T-cells

Our business is highly dependent on our existing SPEAR T-cell candidates including the NY-ESO SPEAR T-cell, the MAGE-A10 Spear T-cell, MAGE-A4 SPEAR T-cell and AFP SPEAR T-cell, which will require significant additional clinical testing before we can seek regulatory approval and begin commercialization of any of our SPEAR T-cells.

There is no guarantee that any of our SPEAR T-cells will achieve regulatory approval or proceed to the next stage of clinical programs. The process for obtaining marketing approval for any candidate is very long and risky and there will be significant challenges for us to address in order to obtain marketing approval, if at all.

There is no guarantee that the results obtained in current clinical trials for the NY-ESO SPEAR T-cell will be sufficient to plan one or more pivotal clinical trials and obtain regulatory approval or marketing authorization. Negative results in the NY-ESO SPEAR T-cell clinical program or in other investigator-initiated clinical programs utilizing the NY-ESO therapeutic candidate may also impact our ability to obtain regulatory approval for other SPEAR T-cells, either at all or within anticipated timeframes because, although the SPEAR T-cell may target a different cancer peptide, the underlying technology platform, manufacturing process and development process is the same for all of our SPEAR T-cells. Accordingly, a failure or delay in any one program may affect the ability to obtain regulatory approval to continue or conduct clinical programs for other SPEAR T-cells.

We may not be able to submit INDs, or the foreign equivalent outside of the United States, to commence additional clinical trials for other SPEAR T-cells on the timeframes we expect, and even if we are able to, the FDA or comparable foreign regulatory authorities may not permit us to proceed with planned clinical trials.

Progression of new SPEAR T-cells into clinical trials is inherently risky and dependent on the results obtained in preclinical programs, the results of other clinical programs and results of third-party programs that utilize common components, such as production of the lentiviral vector lot used for production and administration of our SPEAR T-cell. If results are not available when expected or problems are identified during SPEAR T-cell development, we may experience significant delays in development of pipeline products and in existing clinical programs, which may impact our ability to receive regulatory approval. This may also impact our ability to achieve certain financial milestones and the expected timeframes to market any of our SPEAR T-cells. Failure to submit further IND or the foreign equivalent and commence additional clinical programs will significantly limit our opportunity to generate revenue.

There is no guarantee that the FDA, or any other regulatory authority, will approve any IND (or equivalent application) for any of our SPEAR T-cells, or for new indications for our SPEAR T-cells already in clinical trials, or that amendments to existing protocols will not be required. For example, the FDA issued a partial clinical hold for the Company's proposed MRCLS trial with NY-ESO following review of the IND submitted for the trial. The FDA notification was not based on safety concerns. In its correspondence the FDA requested additional Chemistry Manufacturing and Controls, or CMC, and clinical information prior to the commencement of the proposed trial. An amendment to the ADP-0011-007 protocol for the trial was filed with the FDA which converted the trial into a pilot trial (rather than the previously proposed pivotal trial design with a futility phase) and this amended protocol has now been approved by the FDA resulting in a lift of the partial clinical hold. The start of the MRCLS trial was delayed as a result of the FDA issued partial clinical hold and there is no guarantee that any later MRCLS pivotal trial or further SPEAR T-cell trial will be approved by the FDA.

We are in the process of expanding our clinical trial foot print to Europe. This requires gaining the approval of country specific review bodies for GMO application and CTA. As this is not a harmonized process, the requirements can vary considerably and delays can be incurred at a country level.

In the USA, some institutional review boards, or IRBs, have requested that the Sponsor obtain Investigational Device Exemptions (IDE) from the FDA for the validated clinical trial assay being used to select patients. This has delayed the initiation of some sites and limited the ability to obtain high risk biopsies until an IDE has been granted. Adaptimmune plans to proactively seek IDEs for our SPEAR T-cell assays where appropriate.

Our SPEAR T-cells being developed may have potentially fatal cross-reactivity to other peptides or protein sequences within the body.

One of our prior SPEAR T-cells, designed to target an HLA-1 restricted MAGE-A3 cancer-specific peptide, recognized another unrelated peptide from a protein called TITIN, expressed within normal cardiac and other muscle tissues in patients. As a result of this cross-reactivity to the TITIN protein in the heart, two patients died during our MAGE-A3 clinical program, the program was put on pause, then formally placed on hold by the FDA, after which we terminated the program. We subsequently developed a preclinical safety testing program that identifies potential cross-reactivity risks but there may be gaps or other problems detected in the testing program at a later date. Even with the use of this testing program, there can be no guarantee that the FDA will permit us to begin clinical trials of any additional SPEAR T-cells other than those for which INDs already exist or that other off-target cross-reactivity will not be identified or present in any patient group. Failure to develop an effective preclinical safety testing program will prevent or delay clinical trials of any SPEAR T-cell. Detection of any cross-reactivity will halt or delay any ongoing clinical trials for any SPEAR T-cell and prevent or delay regulatory approval. Given that the underlying technology platform, manufacturing process and development process is similar for all of our TCR therapies, issues pertaining to cross-reactivity for one SPEAR T-cell may impact our ability to obtain regulatory approval for other SPEAR T-cells undergoing development and clinical trials, which would significantly harm our business, prospects, financial condition and results of operations.

Cross-reactivity or allo-reactivity (binding to peptides presented on other HLA types) could also occur where the affinity-enhanced engineered TCR contained within our SPEAR T-cell binds to peptides presented by HLAs other than the HLA type for which the relevant TCR was developed. We have developed a preclinical screening process to identify allo-reactivity risk. Where any allo-reactivity risk is identified, patients with the allo-reactive alleles will be excluded from the trial. Any allo-reactivity or other cross-reactivity that impacts patient safety could materially impact our ability to advance our SPEAR T-cells into clinical trials or to proceed to market approval and commercialization. In addition, there is no guarantee that exclusion of patients with the identified allo-reactive allele will successfully eliminate the risk of allo-reactivity, and serious side effects for patients may still exist. Given that the underlying technology platform, manufacturing process and development process are similar for all of our SPEAR T-cells, issues pertaining to allo-reactivity for one SPEAR T-cell may impact our ability to obtain regulatory approval for other SPEAR T-cells undergoing development and clinical trials, which would significantly harm our business, prospects, financial condition and results of operations.

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Our T-cell therapy, which is a type of cell therapy that uses gene therapy technology, represents a novel approach to cancer treatment that could result in heightened regulatory scrutiny, delays in clinical development, or delays in or our inability to achieve regulatory approval or commercialization of our SPEAR T-cells.

Use of our SPEAR T-cells to treat a patient requires the use of gene therapy technology, which involves combining a patient's T cells with our lentiviral delivery vector containing the gene for our affinity-enhanced engineered TCR. This is a novel treatment approach that carries inherent development risks. We are therefore constantly evaluating and adapting our SPEAR T-cells following the results obtained during development work and the clinical programs. Further development, characterization and evaluation may be required, depending on the results obtained, in particular where such results suggest any potential safety risk for patients. The need to develop further assays, or to modify in any way the protocols related to our SPEAR T-cells to improve safety or effectiveness, may delay the clinical program, regulatory approval or commercialization, if approved at all, of any SPEAR T-cell. Consequently, this may have a material impact on our ability to receive milestone payments and/or generate revenue from our SPEAR T-cells.

In addition, given the novelty of our SPEAR T-cells, the end users and medical personnel require a substantial amount of education and training in their administration of our SPEAR T-cells. Regulatory authorities have very limited experience with commercial engineered cell therapies and SPEAR T-cells for the treatment of cancer. As a result, regulators may be more risk adverse or require substantial dialogue and education as part of the normal regulatory approval process for each stage of development of any SPEAR T-cell. To date, only a limited number of gene therapy products have been approved in the United States and European Union. Consequently, it is difficult to predict and evaluate what additional regulatory hurdles may apply to the development of our SPEAR T-cells and whether additional investment, time or resources will be required to overcome any such hurdles.

Additionally, because our technology involves the genetic modification of patient cells*ex-vivo* using a viral vector, we are subject to many of the challenges and risks of gene therapy, including the following challenges:

- Regulatory requirements governing gene and cell therapy products have changed frequently and may continue to change in the future.
- Random gene insertion associated with retrovirus-mediated genetically modified products, known as insertional oncogenesis, could lead to lymphoma, leukemia or other cancers, or other aberrantly functioning cells. Insertional oncogenesis was seen in early gene therapy studies conducted outside of the United States in 2003. In those studies, insertional oncogenesis resulted in patients developing leukemia following treatment with the relevant gene therapy, with one patient dying. As a result of the data from those studies, the FDA temporarily halted gene therapy trials in the United States. The previous trials involved modification of stem cells rather than T cells and utilized a murine gamma-retroviral vector rather than a lentiviral vector. We cannot guarantee that insertional oncogenesis resulting from administration of our SPEAR T-cells will not occur.
- Although our viral vectors are not able to replicate, there may be a risk with the use of retroviral or lentiviral vectors that they could undergo recombination and lead to new or reactivated pathogenic strains of virus or other infectious diseases.
- There is the potential for delayed adverse events following exposure to gene therapy products due to persistent biological activity of the genetic material or other components of products used to carry the genetic material. In part for this reason, the FDA recommends a 15-year follow-up observation period for all surviving patients who receive treatment using gene therapies in clinical trials. We may need to adopt such an observation period for our therapeutic candidates; however, the FDA does not require that the tracking be complete prior to its review of the Biologics License Application, or BLA.
- Clinical trials using genetically modified cells conducted at institutions that receive funding for recombinant DNA research from the NIH may be subject to review by the NIH Office of Biotechnology Activities' Recombinant DNA Advisory Committee, or RAC. The RAC review process can delay or impede the initiation of a clinical trial. New guidelines were introduced by the NIH in April 2016 relating to the RAC review process for protocols using genetically modified cells and there is uncertainty as to how the new guidelines will operate. This could lead to increased delays in the approval of our protocols or additional education of institution review committees or boards being required during the protocol review process.

If adverse events of the type described above were to occur, further advancement of our clinical trials could be halted or delayed, which would have a material adverse effect on our business and operations. In addition, heightened regulatory scrutiny of gene therapy product candidates may result in delays and increased costs in bringing a product candidate to market, if at all. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate revenue in the future.

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In addition, results seen in third party clinical trials using other cell therapy products, for example CAR-T products, may impact on the further advancement of our clinical trials. Based on the data currently available to us in relation to our clinical trials there is no evidence that the type and severity of neurotoxological events observed with CD19-directed CAR-T cell treatments, including the fatal events observed in the NCT02535364 trial, occur with our NY-ESO-1 TCRs and we do not therefore believe

that any changes to our SPEAR T-cell clinical trial protocols are required. However there is no guarantee that the FDA or other regulatory authorities will agree with that position and further education and discussion with regulatory authorities may be required.

Results seen in clinical trials using products that are used in our combination clinical trials, may impact on the further advancement of our clinical trials. For example, the FDA has placed a clinical hold on three combination studies using KEYTRUDA (pembrolizumab), an anti-PD-1 therapy used to treat multiple myeloma. The hold followed a review of data on patient deaths in these specific combination studies. We have a combination study using the NY-ESO SPEAR T-cell therapy in combination with KEYTRUDA. This combination study has not been placed on hold by the FDA and we have no reason to believe that there is any safety reason for this study to be placed on hold. However there is no guarantee that further reviews of safety data with KEYTRUDA or other anti-PD-1 therapies will not result in delays or holds to our clinical trials or the requirement to amend the protocol for such clinical trials.

T-cell therapy is a novel approach to cancer treatment that creates significant increased risk in terms of side-effect profile, ability to satisfy regulatory requirements associated with clinical trials and the long- term viability of administered SPEAR T-cells.

Development of a pharmaceutical or biologic therapy or product has inherent risks based on differences in patient population and responses to therapy and treatment. The mechanism of action and impact on other systems and tissues within the human body following administration of our SPEAR T-cell is not completely understood, which means that we cannot predict the long-term effects of treatment with our SPEAR T-cells.

We are aware that certain patients do not respond to our SPEAR T-cells and that other patients may relapse or cease to present the peptide being targeted by such SPEAR T-cells. The percentage of the patient population in which these events may occur is unknown, but the inability of patients to respond and the possibility of relapse may impact our ability to conduct clinical trials, to obtain regulatory approvals, if at all, and to successfully commercialize any SPEAR T-cell.

Our clinical trials and the investigator-initiated clinical trials using the NY-ESO TCR therapeutic are still in the early stages, and it is difficult to predict the results that will be obtained in ongoing clinical trials or the next phase or phases of any clinical program. Our SPEAR T-cells have not previously been tested in combination clinical trials, for example use in combination with Merck's PD-1 inhibitor, KEYTRUDA® (pembrolizumab) in patients with multiple myeloma. It is difficult to predict the way in which our SPEAR T-cells will interact with third-party products used in combination clinical trials. Data seen in other combination trials with KEYTRUDA has resulted in certain combination trials with KEYTRUDA being placed on clinical hold by the FDA. We do not, as yet know, whether similar negative side effects will be seen using KEYTRUDA in combination with the NY-ESO T-cell therapy. Any undesirable side effects seen in combination trials may affect our ability to continue with and obtain regulatory approval for the combination therapy, but may also impact our ability to continue with and obtain regulatory approval for our SPEAR T-cell therapies alone.

There is a significant risk at each stage of any clinical program that serious adverse events or low efficacy, as well as less favorable benefit:risk profiles, will prevent our SPEAR T-cells from proceeding further or will result in those programs being suspended or placed on hold (whether voluntarily or as a result of a regulatory authority requirement). For example, there is a risk that the target (or similar) peptide to which any SPEAR T-cell is directed may be present in both patients' cancer cells and other non-cancer cells and tissues. Should this be the case patients may suffer a range of side effects associated with the SPEAR T-cell binding to both the cancer cells and/or other cells and tissues and such side effects could cause patient death. The extent of these side effects will depend on which cells and tissues are affected as well as the degree to which the target (or similar) peptide is expressed in these cells and tissues. Further, following infusion of any of our SPEAR T-cells, there may be a transient inflammatory reaction of the disease to the treatment. Symptoms in any given subject would be dependent on the location and other characteristics of their tumor. For example, subjects with lung tumors may experience dyspnea. Cardiac toxicities may be observed in patients with pre-existing cardiac or pericardial masses. These inflammatory reactions and related symptoms may be mild and self-limited, but can be severe and require medical intervention.

As of January 5, 2017, 61 subjects have received NY-ESO SPEAR T-cells in Adaptimmune-sponsored studies. The most common (>15%) adverse events in these subjects considered by investigators to be at least possibly related to the NY-ESO SPEAR T-cells include: fever, diarrhea, fatigue, rash, nausea, anemia, dyspnea, CRS, lymphopenia, leukopenia, cough, ALT increased, AST increased, hypotension, sinus tachycardia, neutropenia, and thrombocytopenia. Adverse events with severity grade 3 or higher considered by investigators to be at least possibly related and occurring in more than one patient include lymphopenia, leukopenia, anemia, neutropenia, febrile neutropenia, diarrhea, CRS, graft versus host disease (GVHD), hyponatremia, and musculoskeletal chest pain. There has been one report of fatal (grade 5) bone marrow failure, which was considered related to the study treatment regimen

(preconditioning plus SPEAR T-cell). Internal investigations have not identified a mechanism by which NY-ESO SPEAR T-cells may have caused bone marrow failure. Serious adverse events (SAEs) have also been reported on our Company sponsored clinical programs. SAEs considered by investigators to be at least possibly related and occurring in more than one patient include: fever, cytokine release syndrome, dehydration, graft versus host disease, neutropenia, and rash. To date, GVHD, impacting the skin and gastrointestinal tract, has only been reported in our myeloma study involving autologous stem cell transplants (ASCT). Although GVHD is a known complication of ASCT, symptoms such as rash, enterocolitis and diarrhea have been reported in other NY-ESO SPEAR T-cell studies. Since January 5, 2017, there have also been reports of the following serious unexpected adverse reactions considered at least possibly related by investigators across our trials: grade 3 cytomegalovirus infection, grade 3 acute inflammatory demyelinating polyradiculoneuropathy, and grade 4 cytokine release syndrome.

In our ovarian cancer trial with our NY-ESO SPEAR T-cell, the first patient treated experienced a grade 3 cytokine release syndrome at day seven post-infusion, concomitant with a significant proliferation of the engineered T-cells that constituted the majority of the peripheral white blood cells at day 14. This level of cytokine release syndrome had not been seen in previous results from trials using our NY-ESO SPEAR T-cell. The patient's tumor markers were also falling during this time. To manage the cytokine release syndrome, the patient was treated with high dose steroids that may have abrogated the engineered T-cell function. All Adaptimmune protocols now allow for use of the anti-IL6R antibody, tocilizumab, for treatment of cytokine release syndrome in future patients. Tocilizumab has been shown to control cytokine release syndrome likely without abrogating the anti-tumor response.

In addition to our Company sponsored clinical programs, the NY-ESO TCR therapeutic has also been used in an investigator-initiated clinical program funded by the European Union, referred to as the ATTACK 2 program. The therapy, which was produced under a different manufacturing process than Adaptimmune's NY-ESO TCR therapy, was being evaluated for the treatment of patients with advanced gastro-esophageal cancer for the first time. To date, two patients have been treated under this protocol, one of whom passed away 46 days after initial treatment. Said patient experienced enterocolitis and bone marrow failure followed by fatal gangrenous gastrointestinal necrosis and hemorrhage. The investigator determined there was a reasonable possibility that these events were caused by study treatment.

Enrollment in the trial was temporarily paused pending investigation of the patient fatality, but an independent data monitoring committee has since recommended that recruitment can resume following a protocol amendment. The European Union has since terminated funding of the trial due to the delays in trial progression and we are in discussions with the sponsor, the Christie NHS Trust, in relation to any continuation of the trial. The enrollment of patients in our own sponsored clinical trials using NY-ESO SPEAR T-cells have not been affected so far, although regulatory authorities in the United Kingdom and United States were informed of the event.

Because administration of our SPEAR T-cells is patient-specific, the process requires careful handling of patient-specific products and fail-safe tracking, namely the need to ensure that the tracking process is without error and that patient samples are tracked from patient removal, through manufacturing and re-administration to the same patient. We will need to invest in systems, such as bar coding, to ensure fail safe tracking. There is always a risk of a failure in any such system. Inability to develop or adopt an acceptable fail-safe tracking methodology and handling regime may delay or prevent us from receiving regulatory approval. This risk may be increased where our SPEAR T-cells are used in clinical programs that we do not control or sponsor and, should an error be made in the administration of our SPEAR T-cells in such clinical programs, this could affect the steps required in our own clinical programs and manufacturing process requiring the addition of further tracking mechanisms to ensure fail-safe tracking. The tracking systems required to ensure safe patient administration may also require increased administration to satisfy other regulatory requirements, for example data protection

requirements in Europe. The need to ensure tracking systems are adequate and to comply with these additional regulatory requirements may result in delay to the start of trials or the need to obtain additional regulatory licenses or consents prior to starting such trials.

Validation of our SPEAR T-cells requires access to human samples but there is no guarantee that such samples can be obtained or, if they can be obtained, that the terms under which they are provided will be favorable to us.

Certain of the steps involved in validating and carrying out safety testing in relation to our SPEAR T-cells require access to samples (e.g., tissues samples or cell samples) from third parties. Such samples may be obtained from universities or research institutions and will often be provided, subject to satisfaction of certain terms and conditions. There can be no guarantee that we will be able to obtain samples in sufficient quantities to enable development of and use of the full preclinical safety testing program for all SPEAR T-cells undergoing development. In addition, the terms under which such samples are available may not be acceptable to us or may restrict our use of any generated results or require us to make payments to the third parties.

Our SPEAR T-cells and their application are not fully scientifically understood and are still undergoing validation and investigation.

Our SPEAR T-cells and their potential associated risks are still under investigation. For example, there is a potential risk that, given that the TCR chains are produced separately and then assembled within patient T cells into full TCRs, the TCR chains from both

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transduced and naturally occurring T cells could be assembled into an unintended end TCR due to mis-pairing of TCR chains, which could create unknown recognition and cross-reactivity problems within patients. Although this phenomenon has not been reported in humans, it remains a theoretical risk for our SPEAR T-cells and is still being studied and investigated. This could delay regulatory approval, if any, for the relevant SPEAR T-cells. To the extent that any mis-pairing of TCR chains is identified, either in our or our competitors' clinical trials, additional investment may be required in order to modify relevant SPEAR T-cells and to further assess and validate the risk of such mis-pairing to patients. There is also no guarantee that following modification of the relevant SPEAR T-cell, such modified SPEAR T-cell will remain suitable for patient treatment, that it will eliminate the risk of mis-pairing of TCR chains or that regulatory approval will be obtained at all or on a timely basis in relation to such modified SPEAR T-cells. The occurrence of such events would significantly harm our business, prospects, financial condition and results of operations.

We may not be able to identify and validate additional target peptides or isolate and develop affinity-enhanced TCRs that are suitable for validation and further development.

The success of our SPEAR T-cells depends on both the identification of target peptides presented on cancer cells, which can be bound by TCRs, and isolation and affinity enhancement of TCRs, which can be used to treat patients if regulatory approval is obtained. There is an inherent risk that the number of target peptides that can be identified and/or our ability to develop and isolate suitable TCRs for affinity enhancement could be significantly lower than projected or that no additional SPEAR T-cells suitable for further development can be identified. Any failure to identify and validate further target peptides will reduce the number of potential SPEAR T-cells that we can successfully develop, which in turn will reduce the commercial opportunities available to us and increase our reliance on our existing SPEAR T-cells.

In addition, there is no guarantee that our attempts to develop further SPEAR T-cells will result in candidates for which the safety and efficacy profiles enable progression to and through preclinical testing. Failure to identify further candidates for progression into preclinical testing and clinical programs will significantly impact our commercial returns, increase our reliance on the success of our existing SPEAR T-cell programs and may significantly harm our business, prospects, financial condition and results of operations. If resources become limited or if we fail to identify suitable target peptides, TCRs or affinity-enhanced TCRs, our ability to submit INDs for further SPEAR T-cells may be delayed or never realized, which would have a materially adverse effect on our business.

We may encounter substantial delays in our clinical trials or may not be able to conduct our trials on the timelines we expect.

Conduct of clinical trials is dependent on finding clinical sites prepared to carry out the relevant clinical trials, screening of patients by the clinical sites, recruitment of patients both in terms of number and type of patients and general performance of the relevant clinical site. It is difficult to predict how quickly we will be able to recruit suitable patients, find suitable sites, begin clinical programs and administer our SPEAR T-cells. The patient population in which any required peptide antigen is presented may be lower than expected which will increase the timescales required to find and recruit patients into the applicable clinical trial. Screening of a large number of patients is required to identify HLA and tumor antigen positive patients for most of our clinical trials. For example, it has taken longer to recruit patients into our NSCLC trials with both the NY-ESO SPEAR T-cell and MAGE-A10 SPEAR T-cell due to the low percentage expression of peptide antigen seen in the patient populations at the relevant clinical trial sites. With the NY-ESO SPEAR T-cell, presentation of the antigen occurs predominantly in certain sub-types of NSCLC and additional clinical sites may need to be initiated in order to identify patients with those certain NSCLC sub-types. With MAGE-A10, presentation of the peptide antigen is seen in a lower number of patients than anticipated. This has delayed recruitment of patients into NSCLC trials for both therapies and has resulted in the Company incurring additional costs associated with the need to find and initiate additional clinical trial sites. It is also difficult to predict whether changes may be required to any clinical trial design as our clinical trials progress. For example, initial results from current Phase 1/2 clinical trials with the NY-ESO SPEAR T-cell have suggested that fludarabine is required as part of any patient pre-conditioning regimen. This has required amendment to protocol designs, which did not previously include fludarabine, to include fludarabine.

Our clinical trials will compete with other clinical trials that are in the same therapeutic areas as our SPEAR T-cells, which will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Because the number of qualified clinical investigators is limited, we will conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials at such clinical trial sites. Moreover, because our SPEAR T-cells represent a departure from more commonly used methods for cancer treatment, potential patients and their physicians may opt to use conventional therapies, such as chemotherapy and hematopoietic cell transplantation, rather than enrollment in any of our current or future clinical trials. In addition, in relation to any indication, the standard of care for patients in that indication may change or further develop meaning that clinical sites are no longer prepared to continue with any clinical trial or require amendments to agreed protocols for clinical trials. For example, the standard of care in melanoma has changed since the start of our clinical trials in melanoma with the NY-ESO SPEAR T-cell and as a result the clinical trial has been halted due to anticipated unavailability of patients. Such

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circumstances can lead to the suspension of the relevant clinical trial at a site, inability to recruit further patients at that clinical site or a requirement to amend the protocol, all of which will delay or potentially halt progression of a SPEAR T-cell through clinical trials.

Even if we are able to enroll a sufficient number of patients in our clinical trials, delays in patient enrollment may result and have resulted in, increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our SPEAR T-cells.

Comparability studies related to the manufacturing of our SPEAR T-cells may be required ahead of any pivotal trial start date or ahead of use in the European Union. The requirement to carry out such comparability studies may delay the start of any pivotal trial or use of the relevant SPEAR T-cells in Europe. If the results from the

comparability studies are not acceptable, this may further delay the start of such trials and require re-evaluation of the process used to manufacture of our SPEAR T-cells.

We may not be able to develop or obtain approval for the analytical assays and companion diagnostics required for commercialization of our SPEAR T-cells.

Administration of our SPEAR T-cells requires the use of an immuno-chemistry or other screening assay in which patients are screened for the presence of the cancer peptide targeted by our SPEAR T-cells. This assay requires the identification of suitable antibodies which can be used to identify the presence of the relevant target cancer peptide.

If safe and effective use of a biologic product depends on an *in vitro* diagnostic, such as a test to detect patients with HLA type A2, then the FDA generally requires approval or clearance of the diagnostic, known as a companion diagnostic, concurrently with approval of the therapeutic product. To date, the FDA has generally required *in vitro* companion diagnostics that are intended for use in selection of patients who will respond to cancer treatment to obtain a pre-market approval, or PMA, which can take up to several years, for that diagnostic approval or clearance to occur simultaneously with approval of the biologic product.

We expect that, for all of our SPEAR T-cells, the FDA and similar regulatory authorities outside of the United States will require the development and regulatory approval of a companion diagnostic assay as a condition to approval. We also expect that the FDA may require PMA supplemental approvals for use of that same companion diagnostic as a condition of approval of additional SPEAR T-cells. We do not have experience or capabilities in developing or commercializing these companion diagnostics and plan to rely in large part on third parties to perform these functions.

If we, or any third parties that we engage to assist us, are unable to successfully develop companion diagnostic assays for use with our SPEAR T-cells, or are unable to obtain regulatory approval or experience delays in either development or obtaining regulatory approval, we may be unable to identify patients with the specific profile targeted by our SPEAR T-cells for enrollment in our clinical trials. Accordingly, further investment may be required to further develop or obtain the required regulatory approval for the relevant companion diagnostic assay, which would delay or substantially impact our ability to conduct further clinical trials or obtain regulatory approval.

Manufacturing and administering our SPEAR T-cells is complex and we may encounter difficulties in production, particularly with respect to process development or scaling up of our manufacturing capabilities. If we encounter such difficulties, our ability to provide supply of our SPEAR T-cells for clinical trials or for commercial purposes could be delayed or stopped.

The process of manufacturing and administering our SPEAR T-cells is complex and highly regulated. The manufacture of our SPEAR T-cells involves complex processes, including manufacture of a lentiviral delivery vector containing the gene for our affinity-enhanced engineered TCR. Administration of our SPEAR T-cells includes harvesting white blood cells from the patient, isolating certain T cells from the white blood cells, combining patient T cells with our lentiviral delivery vector through a process known as transduction, expanding the transduced T cells to obtain the desired dose, and ultimately infusing the modified T cells back into the patient. As a result of the complexities, our manufacturing and supply costs are likely to be higher than those at more traditional manufacturing processes and the manufacturing process is less reliable and more difficult to reproduce. Our manufacturing process is and will be susceptible to product loss or failure due to logistical issues, including manufacturing issues associated with the differences in patients' white blood cells, interruptions in the manufacturing process, contamination, equipment or reagent failure, supplier error and variability in SPEAR T-cell and patient characteristics.

The complexity of the manufacturing process has led to, and may continue to lead to, delays in certain patients receiving SPEAR T-cells, for example, where their SPEAR T-cells require re-manufacture, or to an inability to manufacture SPEAR T-cells for individual patients. Reasons for this include variations in patient starting material, operator error, errors in packaging of patient product and failures of the bags we use to freeze, store and ship patient product. SPEAR T-cells may also require re-manufacture which could impact resources available and timelines for manufacture of other patient SPEAR T-cells. Any delay in treating patients may also adversely affect a patient's outcome and may result in delays to our clinical programs.

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Our lentiviral delivery vector manufacturing slots have to be agreed in advance with third party contract manufacturers. It has not always been possible to obtain manufacturing slots within the timescales we require for supply of lentiviral delivery vector or to obtain agreed dates for such manufacturing slots sufficiently in advance of the requirement for supply. In addition third party contract manufacturers have cancelled or delayed the start of manufacturing slots, even where such manufacturing slots have been pre-agreed. This has necessitated the use of additional third party contract manufacturers. We cannot guarantee that manufacturing slots will be available within the timescales we require for ongoing supply of SPEAR T-cells. In relation to ongoing NY-ESO SPEAR T-cell trials, this has resulted in delays in supply of the lentiviral delivery vector and has required us to source alternative third party contract manufacturers for supply of the lentiviral delivery vector. In relation to new clinical trials, cancellation and delay in the start of manufacturing slots may result and has resulted, in the case of our AFP SPEAR T-cell, in delay in the start of or enrollment of patients into our clinical trials.

If for any reason we (or any other manufacturer of our therapy) lose a patient's white blood cells or such material gets contaminated or later processing steps fail at any point, the manufacturing process of the SPEAR T-cell for that patient will need to be completely restarted and the resulting delay may adversely affect that patient's outcome. If microbial, viral or other contaminations are discovered in our SPEAR T-cells or in the manufacturing facilities in which our SPEAR T-cells are made or administered, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination.

The requirements for manufacture and supply of SPEAR T-cells for clinical trials in Europe have additional complexities and the manufacture and supply of our SPEAR T-cells is raising issues which have not previously been regulated or observed by the relevant regulatory authorities. For example, supply of SPEAR T-cells for European clinical trials will either require manufacture of SPEAR T-cells in the United States or use of a new CMO in Europe. Where manufacture continues in the United States, there is a need to transfer patient product from clinical sites in Europe to the manufacturer in the United States, for the patient product to be converted into our end SPEAR T-cell product and then for that SPEAR T-cell product to be transported back to the site in Europe for administration to the patient. The supply and manufacturing chain required to achieve this is very complex and could be subject to failures at any point in the supply and manufacturing chain. We are in the process of transferring the manufacturing process to a third-party manufacturer in Europe, but the third-party manufacturer is as yet untested and has not previously supplied any of our SPEAR T-cell product. Any inability to set up acceptable manufacturing and supply chains to enable treatment of patients in Europe could result in delay to those trials starting in Europe.

As our SPEAR T-cells progress through preclinical programs and clinical trials towards approval and commercialization, it is expected that various aspects of the manufacturing and administration process will be altered in an effort to optimize processes and results. We have already identified some improvements to our manufacturing and administration processes, but these changes may not achieve the intended objectives, may not be transferable to third parties or able to be used at larger scales and could cause our SPEAR T-cells to perform differently or affect the results of planned clinical trials or other future clinical trials. In addition, such changes may require amendments to be made to regulatory applications or comparability tests to be conducted which may further delay the timeframes under which modified manufacturing processes can be used for any SPEAR T-cell. For example, we are planning to make changes to the manufacturing process for cell products and vector material used in the manufacture of our SPEAR T-cells for which we will need to conduct clinical trials to gather safety data for each of the different indications for which larger clinical trials are planned. If SPEAR T-cells manufactured under the new process has a worse safety or efficacy profile than the prior investigational product or the process is less reproducible than the previous process, we may need to re-evaluate the use of that manufacturing process, which could significantly delay or even result in the halting of our clinical trials.

Developing a commercially viable process is a difficult and uncertain task, and there are risks associated with scaling to the level required for advanced clinical trials or commercialization, including, among others, increased costs, potential problems with process scale-out, process reproducibility, stability issues, lot consistency, loss of product, and timely availability of reagents or raw materials or contract manufacturing services or facilities. A failure to develop such a commercially viable process within anticipated timescales may prevent or delay progression of our T-cell therapies into pivotal clinical trials and ultimately commercialization. In addition, we may ultimately be

unable to reduce the expenses associated with our SPEAR T-cells to levels that will allow us to achieve a profitable return on investment.

We are in the process of developing and transferring new processes to facilitate such manufacture into third-party contract suppliers. Any delay in the development and transfer of these new processes to the third-party contract supplier or inability of the third-party contract supplier to replicate or carry out the transferred process at the appropriate level and quality or in a reproducible fashion will result in delays in our ability to progress clinical programs, further develop our SPEAR T-cells and obtain marketing approval for our SPEAR T-cells. Even once operational, our ability to manufacture SPEAR T-cells at the level required and in a reproducible fashion can be affected by unexpected delays. Such process scale-up and transfer will also require a demonstration of comparability between the product used in clinical trials and the potential commercial product manufactured by the new process at the new facility. If we are unable to demonstrate that our commercial scale product is comparable to the product used in clinical trials, or the regulatory authority requires additional comparability testing to be carried out, we may not receive regulatory approval for that

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product without additional clinical trials. We cannot guarantee that we will be able to make the required modifications or perform the required comparability testing within currently anticipated timeframes or that such modifications or comparability testing, when made, will obtain regulatory approval or that the new processes or modified processes will successfully be transferred to the third party contract suppliers within currently anticipated timeframes.

Transfer of our new process for manufacture of the lentiviral vector used to manufacture the NY-ESO SPEAR T-cells to our third party contract manufacturing organization ("CMO") has taken substantially longer than originally predicted. If such transfer fails to generate the required levels of product we may need to source alternative CMOs. Any delay, whether in end T-cell product or vector product will also impact when clinical trials may start. Such failure may also impact our collaboration with GSK and result in GSK not exercising options or not developing any of our additional SPEAR T-cells. Even if we are successful, our manufacturing capabilities could be affected by increased costs, unexpected delays, equipment failures, lack of reproducibility, labor shortages, natural disasters, power failures and numerous other factors that could prevent us from realizing the intended benefits of our manufacturing strategy, which in turn could have a material adverse effect on our business.

We have insurance to cover certain business interruption events, particularly research and development expenditure (capped at £10 million) and committed costs (capped at £250,000). However, because our level of insurance is capped, it may be insufficient to fully compensate us if any of these events were to occur in the future.

Our manufacturing process needs to comply with FDA regulations and foreign regulations relating to the quality and reliability of such processes. Any failure to comply with relevant regulations could result in delays in or termination of our clinical programs and suspension or withdrawal of any regulatory approvals.

In order to commercially produce our products, we will need to comply with the FDA's cGMP requirements. Such compliance requirements will also apply to any manufacture of SPEAR T-cells at our Navy Yard manufacturing facility, once operational. We may encounter difficulties in achieving quality control and quality assurance and may experience shortages in qualified personnel. We and our third party contract manufacturers are subject to inspections by the FDA and comparable agencies in other jurisdictions to confirm compliance with applicable regulatory requirements once the process has been approved. Any failure to follow cGMP or other regulatory requirements, reliably manufacture product or delay, interruption or other issues that arise in the manufacture, fill- finish, packaging, or storage of our SPEAR T-cells as a result of a failure of our facilities or the facilities or operations of third parties to comply with regulatory requirements or pass any regulatory authority inspection could significantly impair our ability to develop and commercialize our SPEAR T-cells, including leading to significant delays in the availability of our SPEAR T-cells for our clinical trials or the termination of or suspension of a clinical trial, or the delay or prevention of a filing or approval of marketing applications for our SPEAR T-cells. Significant non-compliance could also result in the imposition of sanctions, including warning letters, fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approvals for our SPEAR T-cells, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could damage our reputation and our business.

When we start manufacturing our SPEAR T-cells at our own facility, there is no guarantee that regulatory authorities will not raise non-compliance issues or that regulatory authorities may require us to make changes to the way in which the facility is operated. This may result in a delay in our ability to manufacture SPEAR T-cells at our own facility. In addition, once our manufacturing facility is up and running there is no guarantee that any SPEAR T-cells produced in such facility will be able to meet regulatory requirements or that we will be able to recruit and maintain sufficient staff to enable manufacture of products within required timescales. Any failure to meet regulatory requirements or produce SPEAR T-cells according to regulatory requirements could result in delays to our clinical programs and may result in withdrawal of regulatory approval for our manufacturing facility.

The outcome of clinical trials is uncertain and our clinical trials may fail to demonstrate adequately the safety and efficacy of any of our SPEAR T-cells which would prevent or delay regulatory approval and commercialization.

There is a risk in any clinical trial (whether sponsored by us or investigator-initiated) that side effects from our SPEAR T-cells will require a hold on, or termination of, our clinical programs or further adjustments to our clinical programs in order to progress our SPEAR T-cell. Our SPEAR T-cells are novel and unproven and regulators will therefore require evidence that the SPEAR T-cells are safe before permitting clinical trials to commence and evidence that the SPEAR T-cells are safe and effective before granting any regulatory approval. In particular, because our SPEAR T-cells are subject to regulation as biological products, we will need to demonstrate that they are safe, pure and potent for use in each target indication. The SPEAR T-cell must demonstrate an acceptable benefit:risk profile in its intended patient population and for its intended use. The benefit:risk profile required for product licensure will vary depending on these factors and may include not only the ability to show tumor shrinkage, but also adequate duration of response, a delay in the progression of the disease and/or an improvement in survival. For example, response rates from the use of our SPEAR T-cells will not be sufficient to obtain regulatory approval unless we can also show an adequate duration of response. The FDA previously issued a partial clinical hold for the Company's MRCLS trial with NY-ESO following review of the IND submitted

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for the trial. This partial clinical hold has now been lifted. However, there can be no guarantee that the FDA or other regulatory authorities will not issue further clinical holds in relation to the MRCLS trial or other trials.

The regulatory authorities (including the FDA) may issue a hold on our clinical trials as a result of safety information and data obtained in third party clinical trials or in relation to third party products. For example, safety concerns have been reported in combination trials with KEYTRUDA which resulted in clinical holds to those combination trials. The clinical holds to such trials have not, as yet, impacted our own combination study with KEYTRUDA in multiple myeloma but there is no guarantee that the FDA or other regulatory authorities will not issue a similar hold in relation to our combination trials as data continues to emerge. Any such hold will require addressing by the Company and will inevitably delay progression of the clinical trials concerned, if such clinical trials progress at all.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. Success in preclinical programs and early clinical trials does not ensure that later clinical trials will be successful. Moreover, the results of preclinical programs and early clinical trials of our SPEAR T-cells may not be predictive of the results of later-stage clinical trials. To date, we have only obtained interim results from Phase 1/2 clinical trials that are uncontrolled, involve small sample sizes and are of shorter duration than might be required for regulatory approval. There may be other reasons why our early clinical trials are not predictive of later clinical trials. In addition, the results of trials in one set of patients or line of treatment may not be predictive of those obtained in another and protocols may need to be revised based on unexpected early results. For example, in our ovarian cancer trial with our NY-ESO SPEAR T-cell, the first patient

treated experienced a grade 3 cytokine release syndrome at day seven post-infusion, concomitant with a significant proliferation of the engineered T cells that constituted nearly 100% of the peripheral blood at day 14. This level of cytokine release syndrome had not been seen in previous results from trials using the NY-ESO SPEAR T-cell. The patient's tumor markers were also falling during this time. To manage the cytokine release syndrome, the patient was treated with high dose steroids that likely abrogated the engineered T-cell function. The protocol was then modified to allow for use of the anti-IL6R antibody, tocilizumab, for treatment of cytokine release syndrome in future patients, which has been shown to control cytokine release syndrome likely without abrogating the anti-tumor response. As another example, in both the European investigator-initiated clinical program in gastro-esophageal cancer and in our own sponsored synovial sarcoma trial there has been one patient death considered to be related to treatment according to the investigator.

We expect there may be greater variability in results for our SPEAR T-cells which are administered on a patient-by-patient basis than for "off-the-shelf" products, like many other biologics. There is typically an extremely high rate of attrition from the failure of any products proceeding through clinical trials. SPEAR T-cells in later stages of clinical trials may fail to show the desired safety and efficacy profile despite having progressed through preclinical programs and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or unacceptable safety issues, notwithstanding promising results in earlier trials. Most biologic candidates that begin clinical trials are never approved by regulatory authorities for commercialization. We cannot therefore guarantee that we will be successful in obtaining the required efficacy and safety profile from the performance of any of our clinical programs.

Certain of our clinical trials include dose escalation studies in which the dose of SPEAR T-cells administered to patients is varied or initial studies in which the pre-treatment regimen may be varied, for example a regimen with and without fludarabine. The outcome of such dose escalation or initial studies will inform the clinical study going forward. However, the need to carry out dose escalation or other initial studies may result in delays in data from such clinical programs while the most suitable dose or regimen is assessed. For example, the trial design for our MAGE-A4, MAGE-A10 and AFP trials includes dose escalation and therefore efficacy data may not be obtained from initial patients treated in such studies.

In addition, even if such trials are successfully completed, we cannot guarantee that the FDA or foreign regulatory authorities will interpret the results as we do. Accordingly, more trials may be required before we can submit our SPEAR T-cell for regulatory approval. To the extent that the results of the trials are not satisfactory to the FDA or foreign regulatory authorities for support of a marketing application, we may be required to expend significant resources, which may not be available to us, to conduct additional trials in support of potential approval of our SPEAR T-cells. We cannot predict whether any of our SPEAR T-cells will satisfy regulatory requirements at all or for indications in which such SPEAR T-cells are currently being evaluated as part of any clinical programs.

We have limited experience conducting clinical trials which may cause a delay in any clinical program and in the obtaining of regulatory approvals.

Although we have recruited a team that has significant experience with clinical trials, as a company we have limited experience in conducting clinical trials and no experience in conducting clinical trials through to regulatory approval. In part because of this lack of experience, we cannot be certain that planned clinical trials will begin or be completed on time, if at all. Large-scale trials would require significant additional financial and management resources, and reliance on third-party clinical investigators,

contract research organizations, or CROs, or consultants. Relying on third-party clinical investigators, consultants or CROs may force us to encounter delays that are outside of our control.

Our SPEAR T-cells may have undesirable side effects or have other properties that could halt their clinical development, prevent their regulatory approval, limit their commercial potential or otherwise result in significant negative consequences.

Where any SPEAR T-cell has undesirable side effects, regulatory approval for such therapeutic may be delayed or suspended, or alternatively may be restricted to particular disease indications or states that are more limited than desirable. This could result in the failure of our products reaching the market or a reduction in the patient population for which any SPEAR T-cell can be used.

As of January 5, 2017, 61 subjects have received NY-ESO SPEAR T-cells in Adaptimmune-sponsored studies. The most common (>15%) adverse events in these subjects considered by investigators to be at least possibly related to the NY-ESO SPEAR T-cells include: fever, diarrhea, fatigue, rash, nausea, anemia, dyspnea, CRS, lymphopenia, leukopenia, cough, ALT increased, AST increased, hypotension, sinus tachycardia, neutropenia, and thrombocytopenia. Adverse events with severity grade 3 or higher considered by investigators to be at least possibly related and occurring in more than one patient include lymphopenia, leukopenia, anemia, neutropenia, febrile neutropenia, diarrhea, CRS, graft versus host disease, hyponatremia, and musculoskeletal chest pain. There has been one report of fatal (grade 5) bone marrow failure, which was considered related to the study treatment regimen (preconditioning plus SPEAR T-cell)Internal investigations have not identified a mechanism by which NY-ESO SPEAR T-cells may have caused bone marrow failure. Serious adverse events (SAEs) have also been reported on our Company sponsored clinical programs. SAEs considered by investigators to be at least possibly related and occurring in more than one patient include: fever, cytokine release syndrome, dehydration, graft versus host disease, neutropenia, and rash. To date, GVHD, impacting the skin and gastrointestinal tract, has only been reported in our myeloma study involving autologous stem cell transplants (ASCT). Although GVHD is a known complication of ASCT, symptoms such as rash, enterocolitis and diarrhea have been reported in other NY-ESO SPEAR T-cell studies. Since January 5, 2017, there have also been reports of the following serious unexpected adverse reactions considered at least possibly related by investigators across our trials: grade 3 cytomegalovirus infection, grade 3 acute inflammatory demyelinating polyradiculoneuropathy, and grade 4 cytokine release syndrome.

In our NY-ESO SPEAR T-cell trials, CRS has been reported in 13/61 subjects who received NY-ESO SPEAR T-cells as of January 2, 2017. Of these 13 subjects, five subjects have experienced CRS at either Grade 3 or 4 in severity. Within cohorts 1-4 of our synovial sarcoma trial as of March 30, 2017, four subjects out of 28 patients evaluated have experienced CRS at Grade 3 or 4 .There have been no reports as of March 30, 2017 of severe neurologic effects of CRS and no fatal CRS events. Subjects with more severe CRS symptoms have generally responded to treatment with the anti-IL6R antibody, tocilizumab. All Adaptimmune protocols now allow for use of tocilizumab for treatment of cytokine release syndrome. Tocilizumab has been shown to control cytokine release syndrome likely without abrogating the anti-tumor response.

In addition to our Company sponsored clinical programs, the NY-ESO TCR therapeutic has also been used in an investigator-initiated clinical program funded by the European Union, referred to as the ATTACK 2 program. The therapy, which was produced under a different manufacturing process than Adaptimmune's NY-ESO TCR therapy, was being evaluated for the treatment of patients with advanced gastro-esophageal cancer for the first time. To date, two patients have been treated under this protocol, one of whom passed away 46 days after initial treatment. Said patient experienced enterocolitis and bone marrow failure followed by fatal gangrenous gastrointestinal necrosis and hemorrhage. The investigator determined there was a reasonable possibility that these events were caused by study treatment. Enrollment in the trial was temporarily paused pending investigation of the patient fatality but an independent data monitoring committee has since recommended that recruitment can resume following a protocol amendment. The European Union has since terminated funding of the trial due to the delays in trial progression and the Company is in discussions with the sponsor, the Christie NHS Trust, in relation to continuation of the trial. The trial is not enrolling patients whilst these discussions continue. The enrollment of patients in our own sponsored clinical trials using our NY-ESO SPEAR T-cells have not been affected so far, although regulatory authorities in the United Kingdom and United States were informed of the event.

Any unacceptable toxicities arising in ongoing clinical programs could result in suspension or termination of those clinical programs. Any suspension or termination may affect other SPEAR T-cells and thereby impact our ability to recognize any product revenues. Any side effects may also result in the need to perform additional trials, which will delay regulatory approval for such SPEAR T-cell, if at all, and require additional resources and financial investment to bring the relevant SPEAR T-cell to market.

In addition, the impact of SPEAR T-cells may vary from patient to patient and this may affect the number of patients who can be successfully treated with our SPEAR T-cells. Depending on the nature of the indication, certain patients may need to be excluded from treatment, which could also impact our ability to recruit patients to

utilize such therapies or to recruit patients to conduct clinical trials in general for our SPEAR T-cells.

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Use of our SPEAR T-cells in combination with other third party products or therapies, for example use in combination with Merck's PD-1 inhibitor, KEYTRUDA® (pembrolizumab) in patients with multiple myeloma may increase or exacerbate side effects that have been seen with our SPEAR T-cells alone or may result in new side effects that have not previously been identified with our SPEAR T-cells alone. Our SPEAR T-cells have not previously been used in any combination clinical trials. Any undesirable side effects seen in combination trials may affect our ability to continue with and obtain regulatory approval for the combination therapy, but may also impact our ability to continue with and obtain regulatory approval for our SPEAR T-cell therapies alone. Adverse events seen in subjects in other clinical trials using the same combination product, for example other clinical combination trials using Merck's PD-1 inhibitor, KEYTRUDA® (pembrolizumab), may affect our ability to progress our own combination trial, resulting in pausing or holding of recruitment or require changes to be made to the protocol to the clinical trial. Merck has recently announced that the FDA has determined that the data available at the present time indicate that the risks of KEYTRUDA plus pomalidomide or lenalidomide outweigh any potential benefit for patients with multiple myeloma. All patients enrolled in KEYNOTE-183 and KEYNOTE-185 combination studies and those in the KEYTRUDA/lenalidomide/dexamethasone cohort in KEYNOTE-023 will discontinue investigational treatment with KEYTRUDA. This clinical hold does not currently apply to other studies with KEYTRUDA.

Clinical trials are expensive, time-consuming and difficult to implement.

Clinical trials, depending on the stage, can be costly as well as difficult to implement and define, particularly with technologies that are not tried and tested, such as our SPEAR T-cells. These factors can lead to a longer clinical development timeline and regulatory approval process, including a requirement to conduct further or more complex clinical trials in order to obtain regulatory approval. Regulatory authorities may disagree with the design of any clinical program, and designing an acceptable program could lead to increased timeframes for obtaining of approvals, if any. In addition, progression of clinical trials depends on the ability to recruit suitable patients to those trials and delay in recruiting will impact the timeframes of such clinical trials and as a result the timeframes for obtaining regulatory approval, if any, for the relevant SPEAR T-cells.

In particular, eligible patients must be screened for the target peptide and HLA type, which may reduce the number of patients who can be recruited for any clinical program. For example lower than expected patient numbers have been seen in the Company's NSCLC clinical trials with its NY-ESO SPEAR T-cell and MAGE-A10 SPEAR T-cell. The ability to administer our SPEAR T-cells to patients in accordance with set protocols for the clinical trials and the results obtained depends on patient participation for the duration of the clinical trial, which many of these patients are unable to do because of their late-stage cancer and limited life expectancy.

Although the initial results in our clinical trials to date may suggest a promising tolerability profile, these results may not be indicative of results obtained in later and larger clinical trials. Long-term follow-up of patients from earlier trials may also result in detection of additional side effects or identification of other safety issues. There is no guarantee of success in any clinical trial and there is a very high attrition rate for pharmaceutical or biological compounds entering clinical trials. Any side effects or negative safety issues identified at any stage of clinical development will require additional investigation and assessment which can result in additional costs and resource requirements that could delay or potentially terminate our clinical trials.

We may face difficulty in enrolling patients in our clinical trials.

We may find it difficult to enroll patients in our clinical trials. For example, in our Phase 1/2 melanoma trial with our NY-ESO SPEAR T-cell, there was a delay in enrollment as a result of competition from other emerging therapies. Identifying and qualifying patients, including testing of patients for appropriate target peptides and HLA type, to participate in clinical trials of our SPEAR T-cells are critical to our success. The patient population in which any required peptide antigen is presented may be lower than expected which will increase the timescales required to find and recruit patients into the applicable clinical trial. For example, fewer patients expressing the required peptide antigens in the Company's NSCLC clinical trials with its NY-ESO SPEAR T-cell and MAGE-A10 SPEAR T-cell have been seen than anticipated. The timing of our clinical trials depends on the speed at which we can recruit patients to participate in testing our SPEAR T-cells. If patients are unwilling to participate in our trials because of negative publicity from adverse events or for other reasons, including competitive clinical trials for similar patient populations, negative results seen in competitive third party clinical trials utilizing similar cell therapy products, the timeline for recruiting patients, conducting trials and obtaining regulatory approval of potential products may be delayed or prevented. These delays could result in increased costs, delays in advancing our product development, delays in testing the effectiveness of our technology or termination of the clinical trials altogether. We may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics to achieve sufficient diversity in a given trial in order to complete our clinical trials in a timely manner. Successful execution of patient treatment and assessment of outcomes is affected by several factors including:

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- eligibility criteria for the trial in question, in particular, presenting the correct HLA type and expression levels of the target antigen;
- ability to detect required expression levels of target antigens in any patient population;
- ability to detect required target antigens in any patient population and to set detection levels at an appropriate level to facilitate patient recruitment;
- severity of the disease under investigation and the type of patient being recruited into the clinical trial;
- design of the trial protocol;
- size of the patient population;
- perceived risks and benefits of the SPEAR T-cell under trial;
- novelty of the SPEAR T-cell and acceptance by oncologists;
- proximity and availability of clinical trial sites for prospective patients;
- availability of competing therapies and clinical trials and ability to obtain patient insurance coverage;
- efforts to facilitate timely enrollment in clinical trials and to provide manufactured product on a timely basis;
- patient referral practices of physicians;
- changes in the underlying standard of care applicable or treatments available for the relevant indication for which a patient is being treated; and

- ability to monitor patients adequately during and after treatment, for example where patients decide not to attend follow-up appointments.

If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business.

Our SPEAR T-cells for which we intend to seek approval as biologic products may face competition sooner than anticipated.

The enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, created an abbreviated pathway for the approval of biosimilar and interchangeable biological products. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an existing reference product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product is approved under a BLA. On March 6, 2015, the FDA approved the first biosimilar product under the BPCIA. However, the law is complex and is still being interpreted and implemented by the FDA and as a result, its ultimate impact, implementation and meaning are subject to uncertainty. While it is uncertain when such processes intended to implement BPCIA may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

There is a risk that the FDA will not consider our SPEAR T-cells to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Additionally, this period of regulatory exclusivity does not apply to companies pursuing regulatory approval via their own traditional BLA, rather than via the abbreviated pathway. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

Foreign countries also have abbreviated regulatory pathways for biosimilars and hence even where the FDA does not approve a biosimilar biologic, a biosimilar could be approved using an abbreviated regulatory pathway in other markets where our SPEAR T-cells are approved and marketed.

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Risks Related to Government Regulation

The FDA regulatory approval process is lengthy and time-consuming, and we may experience significant delays in the clinical development and regulatory approval of our SPEAR T-cells.

We have not previously submitted a BLA to the FDA, or similar approval submissions to comparable foreign authorities. A BLA must include extensive preclinical and clinical data and supporting information to establish the SPEAR T-cell's safety and effectiveness for each desired indication. The BLA must also include significant information regarding the chemistry, manufacturing and controls for the product. We expect the novel nature of our SPEAR T-cells to create additional challenges in obtaining regulatory approval, if at all. For example, the FDA has limited experience with commercial development of T-cell therapies for cancer. Accordingly, the regulatory approval pathway for our SPEAR T-cells may be uncertain, complex, expensive and lengthy, and approval may not be obtained. For example, in relation to our NY-ESO SPEAR T-cell in synovial sarcoma, the FDA requested certain additional information be made available as part of the Company's application to conduct a pivotal study in synovial sarcoma, including a requirement to assess comparability between the manufacturing process used for the initial synovial sarcoma trials and the commercial-ready manufacturing process intended to be used in pivotal trials. The FDA also recommended that we file a SPA in relation to the design of the pivotal study. Such requirements and requests for additional information can delay the start of the any pivotal or other trial and there is no guarantee that the FDA will not continue to require further or additional information ahead of approving any trial whether for our NY-ESO SPEAR T-cells or other SPEAR T-cells.

We could also encounter delays if physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our SPEAR T-cells in lieu of prescribing existing treatments that have established safety and efficacy profiles. Further, a clinical trial may be suspended or terminated by us, the sponsor of an investigator-initiated trial, IRBs for the institutions in which such trials are being conducted, the Data Monitoring Committee for such trial, or by the FDA or other regulatory authorities due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a SPEAR T-cell, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience termination of, or delays in the completion of, any clinical trial of our SPEAR T-cells, the commercial prospects for our SPEAR T-cells will be harmed, and our ability to generate product revenue will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow our product development and approval process and jeopardize our ability to commence product sales and generate revenue.

Many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may ultimately lead to the denial of regulatory approval of our SPEAR T-cells.

The FDA regulatory process can be difficult to predict, in particular whether for example accelerated approval processes are available or further unanticipated clinical trials are required will depend on the data obtained in our ongoing clinical trials.

The regulatory approval process and the amount of time it takes us to obtain regulatory approvals for our SPEAR T-cells will depend on the data that are obtained in our ongoing clinical trials and in one or more future registration or pivotal clinical trials. We may attempt to seek approval on a per indication basis for our SPEAR T-cells on the basis of a single pivotal trial. While the FDA requires in most cases two adequate and well-controlled pivotal clinical trials to demonstrate the efficacy of a product candidate, a single pivotal trial with other confirmatory evidence may be sufficient in rare instances where the trial is a large multicenter trial demonstrating internal consistency and a statistically very persuasive finding of a clinically meaningful effect on mortality, irreversible morbidity or prevention of a disease with a potentially serious outcome and confirmation of the result in a second trial would be practically or ethically impossible. Depending on the data we obtain, the FDA or other regulatory authorities may require additional clinical trials to be carried out or further patients to be treated prior to the granting of any regulatory approval for marketing of our SPEAR T-cells. It is difficult for us to predict with such a novel technology exactly what will be required by the regulatory authorities in order to take our SPEAR T-cells to market or the timeframes under which the relevant regulatory approvals can be obtained.

We have obtained breakthrough therapy status for our NY-ESO SPEAR T-cell for the treatment of certain patients with inoperable or metastatic synovial sarcoma who have received prior chemotherapy. Following exercise of the option over the NY-ESO SPEAR T-cell program by GSK, it is not known whether such breakthrough therapy status will continue or whether GSK will be apply for and obtain any accelerated approval for the NY-ESO SPEAR T-cell. In addition, depending on the data that is obtained by us in our current and future clinical trials for our wholly owned SPEAR T-cells, we may seek breakthrough therapy or fast track designation or accelerated approval from the FDA for our SPEAR T-cells and equivalent accelerated approval procedures in other countries. However, given the novel nature of our SPEAR T-cells, it is difficult for us to predict or guarantee whether the FDA or

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other regulatory authorities will approve such requests or what further clinical or other data may be required to support an application for such accelerated approval procedures.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the SPEAR T-cells involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. The FDA and foreign regulatory authorities also have substantial discretion in the drug and biologics approval process. The number and types of preclinical programs and clinical trials that will be required for regulatory approval varies depending on the SPEAR T-cell, the disease or condition that the SPEAR T-cell is designed to address, and the regulations applicable to any particular SPEAR T-cell. Approval policies, regulations or the type and amount of clinical data necessary to gain approval may change during the course of a SPEAR T-cell's clinical development and may vary among jurisdictions, and there may be varying interpretations of data obtained from preclinical programs or clinical trials, either of which may cause delays or limitations in the approval or the decision not to approve an application. In addition, approval of our SPEAR T-cells could be delayed or refused for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that our SPEAR T-cells have a beneficial risk:benefit profile for any of their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical programs or clinical trials;
- the data collected from clinical trials of our SPEAR T-cells may not be sufficient to the satisfaction of the FDA or comparable foreign regulatory authorities to support the submission of a BLA or other comparable submission in foreign jurisdictions or to obtain regulatory approval in the United States or elsewhere;
- our manufacturing processes or facilities or those of the third-party manufacturers with which we may not be adequate to support approval of our SPEAR T-cells; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

It is possible that none of our SPEAR T-cells will ever obtain the appropriate regulatory approvals necessary to commercialize the TCR therapeutics. Any delay in obtaining, or failure to obtain, required approvals would materially adversely affect our ability to generate revenue from the particular SPEAR T-cell, which would result in significant harm to our business.

Obtaining and maintaining regulatory approval of our SPEAR T-cells in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our SPEAR T-cells in other jurisdictions.

Obtaining and maintaining regulatory approval of our SPEAR T-cells in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants marketing approval of a SPEAR T-cell, comparable regulatory authorities in foreign jurisdictions must also approve the manufacturing, marketing and promotion of the SPEAR T-cell in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional preclinical programs or clinical trials as clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In many jurisdictions outside the United States, a SPEAR T-cell must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our SPEAR T-cells is also subject to approval.

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We may also submit marketing applications in other countries. Regulatory authorities in jurisdictions outside of the United States have requirements for approval of SPEAR T-cells with which we must comply prior to marketing in those jurisdictions. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our SPEAR T-cells in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our SPEAR T-cells will be harmed.

We plan to seek breakthrough therapy or fast track designations and may pursue accelerated approval for some or all of our current SPEAR T-cells, but we may be unable to obtain such designations or, in the case of NY-ESO, maintain its breakthrough therapy designation or, obtain or maintain the benefits associated with such designations.

We have obtained breakthrough therapy status in the U.S. and Europe for our NY-ESO SPEAR T-cell for the treatment of certain patients with inoperable or metastatic synovial sarcoma who have received prior chemotherapy. We may seek breakthrough therapy or fast track designations for our other SPEAR T-cells in the United States or equivalent regulations elsewhere in the world.

In 2012, the FDA established a breakthrough therapy designation which is intended to expedite the development and review of products that treat serious or life-threatening diseases when "preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development." The designation of a SPEAR T-cell as a breakthrough therapy provides potential benefits that include more frequent meetings with the FDA to discuss the development plan for the SPEAR T-cell and ensure collection of appropriate data needed to support approval; more frequent written correspondence from the FDA about things such as the design of the proposed clinical trials and use of biomarkers; intensive guidance on an efficient drug development program, beginning as early as Phase 1; organizational commitment involving senior managers; and eligibility for rolling review and priority review.

Breakthrough therapy designation does not change the standards for product approval. There can be no assurance that we will receive breakthrough therapy designation for any SPEAR T-cell or any particular indication. Additionally, other treatments from competing companies may obtain the designations and impact our ability to develop and commercialize our SPEAR T-cells, which may adversely impact our business, financial condition or results of operation.

We may also seek fast track designation. If a drug or biologic candidate is intended for the treatment of a serious or life-threatening condition or disease and the drug demonstrates the potential to address unmet medical needs for the condition, the sponsor may apply for fast track designation. Under the fast track program, the sponsor of a new drug or biologic candidate may request that the FDA designate the candidate for a specific indication as a fast track drug or biologic concurrent with, or after, the submission of the IND for the candidate. The FDA must determine if the drug or biologic candidate qualifies for fast track designation within 60 days of receipt of the sponsor's request. Even if we do apply for and receive fast track designation, we may not experience a faster development, review or approval process compared to conventional FDA procedures. The FDA may withdraw fast track designation if it believes that the designation is no longer supported by data from our clinical development program.

We may also seek accelerated approval under the FDA's fast track and accelerated approval programs, the FDA may approve a drug or biologic for a serious or life-threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. For drugs granted accelerated approval, post-marketing confirmatory trials have been required to describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. These confirmatory trials must be completed with due diligence. Moreover, the FDA may withdraw approval of our SPEAR T-cell or indication approved under the accelerated approval pathway if, for example:

- the trial or trials required to verify the predicted clinical benefit of our SPEAR T-cell fail to verify such benefit or do not demonstrate sufficient clinical benefit to justify the risks associated with the drug;
- other evidence demonstrates that our SPEAR T-cell is not shown to be safe or effective under the conditions of use;
- we fail to conduct any required post approval trial of our SPEAR T-cell with due diligence; or
- we disseminate false or misleading promotional materials relating to the relevant SPEAR T-cell.

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Even if we receive regulatory approval of our SPEAR T-cells, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense as well as significant penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our SPEAR T-cells.

Any regulatory approvals that we receive for our SPEAR T-cells will require surveillance to monitor the safety and efficacy of the SPEAR T-cell. The FDA may also require a risk evaluation and mitigation strategy in order to approve our SPEAR T-cells, which could entail requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if the FDA or a comparable foreign regulatory authority approves our SPEAR T-cells, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our SPEAR T-cells will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration and listing, as well as continued compliance with cGMPs and cGCPs for any clinical trials that we conduct post-approval. We and our contract manufacturers will be subject to periodic unannounced inspections by the FDA to monitor and ensure compliance with cGMPs. We must also comply with requirements concerning advertising and promotion for any SPEAR T-cells for which we obtain marketing approval. Promotional communications with respect to prescription drugs, including biologics, are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved labeling. Thus, we will not be able to promote any SPEAR T-cells we develop for indications or uses for which they are not approved. Later discovery of previously unknown problems with our SPEAR T-cells, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on our ability to conduct clinical trials, including full or partial clinical holds on ongoing or planned trials;
- restrictions on such products' manufacturing processes;
- restrictions on the marketing of a product;
- restrictions on product distribution;
- requirements to conduct post-marketing clinical trials;
- untitled or warning letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- fines, restitution or disgorgement of profits or revenue;
- suspension or withdrawal of regulatory approvals;
- refusal to permit the import or export of our products;
- product seizure;
- injunctions;
- imposition of civil penalties; or
- criminal prosecution.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our SPEAR T-cells. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

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In addition, if following any pivotal clinical trial we were able to obtain accelerated approval of any of our SPEAR T-cell, the FDA will require us to conduct a confirmatory trial or trials to verify the predicted clinical benefit and additional safety studies. The results from the confirmatory trial or trials may not support the clinical

benefit, which would result in the approval being withdrawn.

We may seek a conditional marketing authorization in Europe for some or all of our current SPEAR T-cells, but we may not be able to obtain or maintain such authorization.

As part of its marketing authorization process, the EMA may grant marketing authorizations for certain categories of medicinal products on the basis of less complete data than is normally required, when doing so may meet unmet medical needs of patients and serve the interest of public health. In such cases, it is possible for the Committee for Medicinal Products for Human Use, or CHMP, to recommend the granting of a marketing authorization, subject to certain specific obligations to be reviewed annually, which is referred to as a conditional marketing authorization. This may apply to medicinal products for human use that fall under the jurisdiction of the EMA, including those that aim at the treatment, the prevention, or the medical diagnosis of seriously debilitating diseases or life-threatening diseases and those designated as orphan medicinal products.

A conditional marketing authorization may be granted when the CHMP finds that, although comprehensive clinical data referring to the safety and efficacy of the medicinal product have not been supplied, all the following requirements are met:

- the risk-benefit balance of the medicinal product is positive;
- it is likely that the applicant will be in a position to provide the comprehensive clinical data;
- unmet medical needs will be fulfilled; and
- the benefit to public health of the immediate availability on the market of the medicinal product concerned outweighs the risk inherent in the fact that additional data is still required.

The granting of a conditional marketing authorization is restricted to situations in which only the clinical part of the application is not yet fully complete. Incomplete preclinical or quality data may only be accepted if duly justified and only in the case of a product intended to be used in emergency situations in response to public-health threats. Conditional marketing authorizations are valid for one year, on a renewable basis. The holder will be required to complete ongoing trials or to conduct new trials with a view to confirming that the benefit-risk balance is positive. In addition, specific obligations may be imposed in relation to the collection of pharmacovigilance data.

Granting a conditional marketing authorization allows medicines to reach patients with unmet medical needs earlier than might otherwise be the case and will ensure that additional data on a product are generated, submitted, assessed and acted upon. Although we may seek a conditional marketing authorization for one or more of our SPEAR T-cells by the EMA, the EMA or CHMP may ultimately not agree that the requirements for such conditional marketing authorization have been satisfied and hence delay the commercialization of our SPEAR T-cells.

We may not be able to obtain or maintain orphan drug exclusivity for our SPEAR T-cells.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs or biologics for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug or biologic intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals in the United States.

Generally, if a product with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the EMA or the FDA from approving another marketing application for the same drug for that time period. The applicable period is seven years in the United States and 10 years in Europe. The European exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition.

Orphan drug designation for our NY-ESO SPEAR T-cell for the treatment of soft tissue sarcoma was granted by the FDA in March 2016. Some of our other SPEAR T-cells or the indications which our SPEAR T-cells are used to treat may be eligible for orphan drug designation. In the United States, under the Orphan Drug Act, the FDA may grant orphan designation to a drug intended

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to treat a rare disease or condition. Such diseases and conditions are those that affect fewer than 200,000 individuals in the United States or, if they affect more than 200,000 individuals in the United States, there is no reasonable expectation that the cost of developing and making a drug product available in the United States for these types of diseases or conditions will be recovered from sales of the product. If the FDA grants orphan drug designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by that agency. Orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review and approval process, but it can lead to financial incentives, such as opportunities for grant funding toward clinical trial costs, tax advantages in-lieu of R&D tax credits and user-fee waivers. If a product that has orphan drug designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan drug marketing exclusivity for a period of seven years. Orphan drug marketing exclusivity generally prevents the FDA from approving another application, including a full BLA, to market the same drug for the same indication for seven years, except in limited circumstances, including if the FDA concludes that the later drug is clinically superior to the approved drug.

Orphan drug designation for the company's NY-ESO SPEAR T-cell for the treatment of soft tissue sarcoma, a solid tumor cancer has also been granted by the European Union. Orphan drug designation provides certain regulatory and financial incentives for companies to develop and market therapies that treat a life-threatening or chronically debilitating condition affecting no more than five in 10,000 persons in the European Union, and where no satisfactory treatment is available. The designation provides incentives for companies seeking protocol assistance and scientific advice from the EMA during the product development phase and a 10-year period of marketing exclusivity in the European Union following product approval.

A drug is clinically superior if it is safer, more effective or makes a major contribution to patient care. Orphan drug marketing exclusivity rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition. There can be no assurance that any SPEAR T-cell will be eligible for orphan drug designation in the United States or in other jurisdictions or that it will obtain orphan drug marketing exclusivity upon approval or that we or GSK will not lose orphan drug designation for the NY-ESO SPEAR T-cell. Inability to obtain orphan drug designation for a specific SPEAR T-cell or loss of such designation for the NY-ESO SPEAR T-cell in the future would prevent any ability to take advantage of the financial benefits associated with orphan drug designation and would preclude us from obtaining marketing exclusivity upon approval, if any. Even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs can be approved for the same condition. The extent of market exclusivity which is obtained may also be affected if the indication for any relevant registration or pivotal trial is narrower than the orphan designation granted. Even after an orphan drug is approved, the FDA can subsequently approve another drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

Any failure by us to comply with existing regulations could harm our reputation and operating results.

The production of our SPEAR T-cells is highly regulated and subject to constant inspection. The regulatory environment may also change from time to time. Any failure to comply with regulatory requirements, whether in the United States or in other countries in which our SPEAR T-cells are supplied, may result in investigation by regulatory authorities, suspension of regulatory authorizations and, as a result, suspension of clinical programs or ability to supply any of our SPEAR T-cells and potentially significant fines or other penalties being imposed in relation to any breach. Any failure may also harm our reputation and impact our ability going forward to obtain regulatory approvals for other SPEAR T-cells or require us to undertake additional organizational changes to minimize the risk of further breach.

Our research and development activities utilize hazardous, radioactive and biological materials. Should such materials cause injury or be used other than in accordance with applicable laws and regulations, we may be liable for damages.

We use, hazardous and biological reagents and materials in our research and development at our U.K. site. We also use radioactive reagents and materials in our research and development in the United Kingdom. We have obtained the appropriate certification or ensured that such certification has been obtained as required for the use of these reagents but our use is subject to compliance with applicable laws and there is a risk that should any third party or employee suffer injury or damage from radioactive, hazardous or biological reagents that we may incur liability or obligations to compensate such third parties or employees. We have employer's liability insurance capped at £10.0 million per occurrence and public liability insurance capped at £3.0 million per occurrence; however, these amounts may be insufficient to compensate us if these events actually occur in the future.

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We are subject to the U.K. Bribery Act, the U.S. Foreign Corrupt Practices Act and other anti-corruption laws, as well as export control laws, customs laws, sanctions laws and other laws governing our operations. If we fail to comply with these laws, we could be subject to civil or criminal penalties, other remedial measures, and legal expenses, which could adversely affect our business, results of operations and financial condition.

Our operations are subject to anti-corruption laws, including the U.K. Bribery Act 2010, or Bribery Act, the U.S. Foreign Corrupt Practices Act, or FCPA, and other anti-corruption laws that apply in countries where we do business. The Bribery Act, the FCPA and these other laws generally prohibit us and our employees and intermediaries from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. Under the Bribery Act, we may also be liable for failing to prevent a person associated with us from committing a bribery offense. We and our commercial partners may operate in a number of jurisdictions that pose a high risk of potential Bribery Act or FCPA violations, and we participate in collaborations and relationships with third parties whose actions, if non-compliant, could potentially subject us to liability under the Bribery Act, FCPA or local anti-corruption laws. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted.

We are also subject to other laws and regulations governing our international operations, including regulations administered by the governments of the United Kingdom and the United States, and authorities in the European Union, including applicable export control regulations, economic sanctions on countries and persons, anti-money laundering laws, customs requirements and currency exchange regulations, collectively referred to as the Trade Control laws.

However, there is no assurance that we will be completely effective in ensuring our compliance with all applicable anti-corruption laws, including the Bribery Act, the FCPA or other legal requirements, including Trade Control laws. If we are not in compliance with the Bribery Act, the FCPA and other anti-corruption laws or Trade Control laws, we may be subject to criminal and civil penalties, disgorgement and other sanctions and remedial measures, and legal expenses, which could have an adverse impact on our business, financial condition, results of operations and liquidity. Likewise, any investigation of any potential violations of the Bribery Act, the FCPA, other anti-corruption laws or Trade Control laws by U.K., U.S. or other authorities could also have an adverse impact on our reputation, our business, results of operations and financial condition.

If we are found in violation of federal or state "fraud and abuse" or other health care laws, we may be required to pay a penalty and/or be suspended from participation in federal or state health care programs, which may adversely affect our business, financial condition and results of operations.

If we obtain marketing approval for our products in the United States, if at all, we will be subject to various federal and state health care "fraud and abuse" and other health care laws. Healthcare providers, physicians and third-party payors play a primary role in the recommendation and use of pharmaceutical products that are granted marketing approval. Accordingly, arrangements with third-party payors, existing or potential customers and referral sources are subject to broadly applicable fraud and abuse and other healthcare laws and regulations, and these laws and regulations may constrain the business or financial arrangements and relationships through which manufacturers market, sell and distribute the products for which they obtain marketing approval.

Such restrictions under applicable federal and state healthcare laws and regulations include the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or kind, in exchange for, or to induce, either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers, on the one hand, and prescribers, purchasers and formulary managers on the other. Cases have been brought under false claims laws alleging that off-label promotion of pharmaceutical products or the provision of kickbacks has resulted in the submission of false claims to governmental health care programs. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the Healthcare Reform Act, amended the intent requirement of the federal Anti-Kickback Statute. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. Under federal government regulations, some arrangements, known as safe harbors, are deemed not to violate the federal Anti-Kickback Statute and analogous state law requirements;

- the federal False Claims Act, or FCA, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid or other third-party payors that are false or fraudulent. Federal Anti-Kickback Statute violations and certain marketing practices, including off-label promotion, also may implicate the FCA. In addition, private individuals have the ability to bring actions on behalf of the government under the FCA and under the false claims laws of several states;

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- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- the federal Physician Payment Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments and other transfers of value to physicians, other healthcare providers and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members. The CMS publishes the reported data in a searchable form on an annual basis;

- The Health Insurance Portability and Accountability Act of 1996 (HIPAA) imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, which governs the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; and

- state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to: items or services reimbursed by any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance issued by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. California and a few other states have passed laws that require pharmaceutical companies to comply with the April 2003 Office of Inspector General Compliance Program Guidance for Pharmaceutical Manufacturers and/or the Pharmaceutical Research and Manufacturers of America Code on Interactions with Healthcare Professionals. In addition, several states impose other marketing restrictions or require pharmaceutical companies to make marketing or price disclosures to the state. There are ambiguities as to what is required to comply with these state requirements and if we fail to comply with an applicable state law requirement we could be subject to penalties.

Neither the government nor the courts have provided definitive guidance on the application of fraud and abuse laws to our business. Law enforcement authorities are increasingly focused on enforcing these laws. Although we seek to structure our business arrangements in compliance with all applicable requirements, these laws are broadly written, and it is often difficult to determine precisely how the law will be applied in specific circumstances. Accordingly, it is possible that, once we begin marketing our product(s) some of our practices may be challenged under these laws. While we intend to structure our business arrangements to comply with these laws, it is possible that the government could allege violations of, or convict us of violating, these laws. Violation of any of the laws described above or any other governmental laws and regulations may result in penalties, including civil and criminal penalties, damages, fines, the curtailment or restructuring of operations, the exclusion from participation in federal and state healthcare programs and imprisonment. Furthermore, efforts to ensure that business activities and business arrangements comply with applicable healthcare laws and regulations can be costly for manufacturers of branded prescription products. Additionally, if we are found in violation of one or more of these laws our business, results of operations and financial condition may be adversely affected.

Our current cash projections include reliance on the ability to obtain certain tax credits and the operation of certain tax regimes with in the United Kingdom. Should these cease to be available, this could impact our ongoing requirement for investment and the timeframes within which additional investment is required.

As a company that carries out extensive research and development activities, we benefit from the U.K. research and development tax credit regime for small and medium sized companies, whereby our principal research subsidiary company, Adaptimmune Limited, is able to surrender the trading losses that arise from its research and development activities for a payable tax credit of up to approximately 33.4% of eligible research and development expenditures. Qualifying expenditures largely comprise employment costs for research staff, consumables and certain internal overhead costs incurred as part of research projects. Subcontracted research expenditures are eligible for a cash rebate of up to approximately 21.7%. The majority of our pipeline research, clinical trials management and manufacturing development activities, all of which are being carried out by Adaptimmune Limited, are eligible for inclusion within these tax credit cash rebate claims.

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We may not be able to continue to claim research and development tax credits (R&D tax credits) in the future as we increase our personnel and expand our business because we may no longer qualify as an SME (small or medium-sized enterprise). In order to qualify as an SME for R&D tax credits, we must continue to be a company with fewer than 500 employees and also have either an annual turnover not exceeding €100 million or a balance sheet not exceeding €86 million.

We may also benefit in the future from the United Kingdom's "patent box" regime, which would allow certain profits attributable to revenues from patented products to be taxed at a rate that over time will be reduced to 10%. As we have many different patents covering our products, future upfront fees, milestone fees, product revenues, and royalties could be taxed at this favorably low tax rate. When taken in combination with the enhanced relief available on our research and development expenditures, we expect a long-term lower rate of corporation tax to apply to us. If, however, there are unexpected adverse changes to the United Kingdom research and development tax credit regime or the "patent box" regime, or we are unable to qualify for such advantageous tax legislation, our business, results of operations and financial condition may be adversely affected.

Risks Related to the Commercialization of Our SPEAR T-cells

The market opportunities for our SPEAR T-cells may be limited to those patients who have failed prior treatments.

Initial approval of new cancer therapies may be limited to what is referred to as third-line use. Third-line treatment is the third type of treatment following initial, or first-line, treatment and second-line treatment, which is given when first-line treatment does not work or ceases working. However, cancer therapies may be used from the point at which cancer is detected in its early stages (first line) onward. Whenever the first-line therapy fails or the process is unsuccessful, second-line therapy may be administered, such as additional rounds of chemotherapy, radiation and antibody drugs or a combination of these treatments. If second-line therapies fail, patients are generally given the opportunity to receive third-line therapies, which tend to be more novel therapies. Our current clinical trials generally require that patients have received chemotherapy prior to enrollment. Depending upon the outcome of our current trials, we may conduct future clinical trials using our SPEAR T-cells for first-line therapy, but there can be no guarantee that clinical trials will be approved or that if approved such trials will lead to regulatory approval. If our SPEAR T-cells only receive third-line or second-line approval, the patient population to which we can supply our SPEAR T-cells will be significantly reduced, which may limit our commercial opportunities.

In addition, our patient population may be derived from those who have previously failed checkpoint therapy, which may result in tumor resistance mechanisms which also impart resistance to SPEAR T-cell therapies.

Our estimates of the patient population that may be treated by our SPEAR T-cells is based on published information. This information may not be accurate in relation to our SPEAR T-cells and our estimates of potential patient populations could therefore be much higher than those that are actually available or possible for commercialization.

In addition, these estimates are based on assumptions about the number of eligible patients which have the peptide and HLA type targeted by our SPEAR T-cells. Different patient populations will present different peptides according to their specific HLA type. HLA types vary across the patient population and, due to this variability, any therapy will initially only be suitable for treatment of patients expressing the particular HLA type presenting the relevant peptide. Our current SPEAR T-cells have been developed for patients who are HLA A2 which will reduce the size of the patient population that can be treated unless we develop and receive regulatory approval for SPEAR T-cells approved for additional HLA peptides.

We currently have no marketing and sales organization and have no experience in marketing products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our SPEAR T-cells, we may not be able to generate product revenue.

As an organization, we have never marketed or supplied commercial pharmaceutical or biologic products or therapies. We do not currently have a sales force and

will need to grow and develop the sales function and associated support network if we are to supply SPEAR T-cells on a commercial basis. As our SPEAR T-cells proceed through clinical programs, we intend to develop an in-house marketing organization and sales force, which will require significant capital expenditures, management resources, and time. We will have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train, and retain marketing and sales personnel. This process may result in additional delays in bringing our TCR product candidate to market or in certain cases require us to enter into alliances with third parties in order to do so. However, there can be no assurance that we will be able to establish or maintain such collaborative arrangements, or even if we are able to do so, that they will result in effective sales forces. Any revenue we receive will depend upon the efforts of such third parties, which may not be successful. We may have little or no control over the marketing and sales efforts of such third parties, and our revenue from SPEAR T-cell sales may be lower than if we had commercialized our SPEAR T-cells ourselves. We also face significant competition in our search for third parties to assist us with the sales and marketing efforts of our SPEAR T-cells. Such competition may also result in delay or inability to supply SPEAR T-cells to particular countries or territories in the world which in turn will restrict the revenue that can be obtained from any SPEAR T-cell. Any inability on our part to develop in-house sales and commercial distribution capabilities or to establish and maintain relationships with

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third-party collaborators that can successfully commercialize any SPEAR T-cell in the United States or elsewhere will have a materially adverse effect on our business and results of operations.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our SPEAR T-cells.

We face an inherent risk of product liability as a result of the clinical testing of our SPEAR T-cells and will face an even greater risk upon any commercialization. For example, we may be sued if any of our SPEAR T-cells causes or is perceived to cause injury or is found to be otherwise unsuitable during clinical testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability or a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our SPEAR T-cell. Even a successful defense would require significant financial and management resources and, regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our SPEAR T-cells;
- injury to our reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- exhaustion of any available insurance and our capital resources;
- the inability to commercialize SPEAR T-cells; and
- a decline in our share price.

Our inability to obtain sufficient product liability insurance at an acceptable price to protect against potential product liability claims could also prevent or inhibit the commercialization of our SPEAR T-cells. We currently hold £15.0 million in clinical trial insurance coverage in the aggregate per year, with a per trial limit of £3-4.0 million. We also hold products and services liability insurance capped at £3.0 million in the aggregate and public liability insurance capped at £3.0 million per occurrence. These levels may not be adequate to cover all liabilities that we may incur. We may also need to increase our insurance coverage as we expand the scope of our clinical trials and commercialize any of our product SPEAR T-cells. In addition, insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Even if we obtain regulatory approval of our SPEAR T-cells, they may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers and others in the medical community.

The use of engineered T cells as a potential cancer treatment is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers and others in the medical community. Additional factors will influence whether our SPEAR T-cells are accepted in the market, including:

- the clinical indications for which our SPEAR T-cells are approved;

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- physicians, hospitals, cancer treatment centers and patients considering our SPEAR T-cells as a safe and effective treatment;
- the potential and perceived advantages of our SPEAR T-cells over alternative treatments;
- the prevalence and severity of any side effects;
- product labeling or prescribing information requirements of the FDA or other regulatory authorities;
- limitations or warnings contained in the labeling approved by the FDA;
- the timing of market introduction of our SPEAR T-cells as well as competitive products;

- the cost of treatment in relation to alternative treatments;
- the availability of coverage, adequate reimbursement and pricing by third-party payors and government authorities;
- the willingness of patients to pay for our SPEAR T-cell on an out-of-pocket basis in the absence of coverage by third-party payors and government authorities;
- relative convenience and ease of administration as compared to alternative treatments and competitive therapies; and
- the effectiveness of our sales and marketing efforts.

In addition, although we are not utilizing embryonic stem cells or replication competent vectors, adverse publicity due to the ethical and social controversies surrounding the therapeutic use of such technologies, and reported side effects from any clinical trials using these technologies or the failure of such trials to demonstrate that these therapies are safe and effective may limit market acceptance of our SPEAR T-cells. If our SPEAR T-cells are approved but fail to achieve market acceptance among physicians, patients, hospitals, cancer treatment centers or others in the medical community, we will not be able to generate significant revenue.

Even if our SPEAR T-cells achieve market acceptance, we may not be able to maintain that market acceptance over time if new products or technologies are introduced that are more favorably received than our SPEAR T-cells, are more cost effective or render our SPEAR T-cells obsolete.

Coverage and reimbursement may be limited or unavailable in certain market segments for our SPEAR T-cells, which could make it difficult for us to sell our SPEAR T-cells profitably.

Successful sales of our SPEAR T-cells, if approved, depend on the availability of coverage and adequate reimbursement from third-party payors. In addition, because our SPEAR T-cells represent new approaches to the treatment of cancer, we cannot accurately estimate the potential revenue from our SPEAR T-cells.

Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Obtaining coverage and adequate reimbursement from governmental healthcare programs, such as Medicare and Medicaid, and commercial payors is critical to new product acceptance.

Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs and treatments they will cover and the amount of reimbursement. Reimbursement by a third-party payor may depend upon a number of factors, including, but not limited to, the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

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Obtaining coverage and reimbursement approval of a SPEAR T-cell from a government or other third-party payor is a time-consuming and costly process which could require us to provide to the payor supporting scientific, clinical and cost-effectiveness data for the use of our products. Even if we obtain coverage for a given SPEAR T-cell, the resulting reimbursement payment rates might not be adequate for us to achieve or sustain profitability or may require co-payments that patients find unacceptably high. Patients are unlikely to use our SPEAR T-cells unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our SPEAR T-cells.

In the United States, no uniform policy of coverage and reimbursement for products exists among third-party payors. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our SPEAR T-cells to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained.

We intend to seek approval to market our SPEAR T-cells in both the United States and in selected jurisdictions. If we obtain approval in one or more foreign jurisdictions for our SPEAR T-cells, we will be subject to rules and regulations in those jurisdictions.

In some foreign countries, particularly those in the European Union, the pricing of biologics is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after obtaining marketing approval of a SPEAR T-cell. In addition, market acceptance and sales of our SPEAR T-cells will depend significantly on the availability of coverage and adequate reimbursement from third-party payors for our SPEAR T-cells and may be affected by existing and future health care reform measures.

Third-party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to the health care system that could impact our ability to sell our products profitably. In particular, the recently enacted U.S. Healthcare Reform Act and its implementing regulations, among other things, revised the methodology by which rebates owed by manufacturers to the state and federal government for covered outpatient drugs and certain biologics, including our SPEAR T-cells, under the Medicaid Drug Rebate Program are calculated, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, and provided incentives to programs that increase the federal government's comparative effectiveness research.

Other legislative changes have been proposed and adopted in the United States since the Healthcare Reform Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs.

This includes aggregate reductions of Medicare payments to providers up to two percent per fiscal year, which went into effect on April 1, 2013 and will remain in effect until 2024, unless additional congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which, among other things, reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our SPEAR T-cells, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our SPEAR T-cells;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

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Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

Risks Related to Our Reliance Upon Third Parties

We rely heavily on GSK for the NY-ESO SPEAR T-cell clinical program, which may also affect other SPEAR T-cells.

Commercialization of the NY-ESO SPEAR T-cell therapy and our own ability to commercialize other SPEAR T-cells depends heavily on the ongoing collaboration with GSK and payments made by GSK to us upon achievement of specified milestones. GSK has the right to nominate three further target programs in addition to the NY-ESO SPEAR T-cell and PRAME SPEAR T-cell programs under the collaboration arrangements. We have no control over whether GSK will elect to progress additional targets under the collaboration arrangements and therefore trigger additional investment from GSK in our SPEAR T-cells. If GSK does not elect to do so, we may require additional capital or investment or need to enter into alternative strategic alliances. In addition, GSK has a right to terminate the GSK Agreement or any specific license under the GSK Agreement for any reason on provision of sixty days' notice. Termination may impact not only our requirement for additional investment or capital but also the timeframes within which current clinical programs can be performed and the development of a suitable commercial-scale manufacturing process for any of our SPEAR T-cells.

On September 7, 2017, we announced that GSK exercised its option under the GSK Agreement signed in 2014 to exclusively license the right to research, develop, and commercialize our NY-ESO SPEAR T-cell program. As a result of the option exercise the NY-ESO SPEAR T-cell program is now being transitioned to GSK. The amount of time and level of resources required to fully transition the program to GSK may impact on our ability to progress other wholly owned programs and divert resources required to further develop our SPEAR T-cells or the manufacturing process for our SPEAR T-cells. The timescales for transition of the NY-ESO SPEAR T-cell program to GSK cannot be guaranteed and rely heavily on GSK's ability to put in place the required resources and third party agreements to take over responsibility of the NY-ESO SPEAR T-cell program. Ability to transition successfully to GSK is also dependent on certain of our third party vendors. Additional work may also be required in order to successfully transition the NY-ESO SPEAR T-cell program to GSK that is not currently planned or resourced. Should GSK be unable to put in place required third party agreements, we may be unable to transition the NY-ESO SPEAR T-cell program to GSK within currently anticipated timescales, if at all.

The current development plans or any future development plan agreed upon between GSK and us, including those relating to the PRAME SPEAR T-cell and NY-ESO SPEAR T-cell, may be unsuccessful or fail to result in candidate therapies that are feasible for further development or commercialization. In addition, milestone payments may not be paid or may be varied where any development plan is amended or where any development plan is terminated prior to completion for lack of feasibility or lack of identification of any suitable candidates that meet the required criteria for progression to the next stage of development.

There is therefore no guarantee that any payments due on commercialization of products under the GSK Agreement will be due or payable by GSK at any time or on the timeframes currently expected. In particular, GSK has now exercised its option to the NY-ESO SPEAR T-cell program and commercialization of the NY-ESO SPEAR T-cell is now the responsibility of GSK. The timing for commercialization of the NY-ESO SPEAR T-cell and the route to commercialization will be determined by GSK and we cannot guarantee that GSK will commercialize the NY-ESO SPEAR T-cell within expected timelines or at all. Any substantial delay in the progression of the NY-ESO SPEAR T-cell into pivotal or other clinical trials by GSK will impact the timing of payments received by us in relation to the NY-ESO SPEAR T-cell program.

In addition, the development plans agreed upon with GSK (whether relating to transition of the NY-ESO SPEAR T-cell or to the PRAME SPEAR T-cell) and any future development plans will be subject to change as a result of risks inherent with the development of any pharmaceutical, biological or gene therapy product. Changes may be agreed to expand or change the scope of the collaboration or the responsibilities of the parties under the collaboration. For example, in February 2016 the GSK Agreement was expanded to accelerate the development of the NY-ESO SPEAR T-cells towards pivotal trials in synovial sarcoma and provide for additional combination trials. Changes to the development plans or collaboration agreement may impact the timing and extent of milestone payments made by GSK to us, the nature of the relationship with GSK or the scope of the collaboration with GSK.

GSK has the ability to influence or control certain decisions relating to the development of therapies covered the GSK Agreement. This ability could result in delays to the clinical programs covered by the collaboration or changes to the scope of those clinical programs, including the disease indications relevant to such clinical programs. Under the GSK Agreement, we are also prohibited from independently developing or commercializing therapies directed at the targets subject to outstanding options granted to GSK. In addition, GSK may have competing internal or commercial interests including its independent collaboration with Immunocore any of which could impact our collaboration or the ability of GSK to take any clinical programs forward to the next stage

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following the exercise of their option. Given GSK will be taking over the responsibility for the NY-ESO SPEAR T-cell program, decisions taken by GSK (with limited or no input from us) may impact on the development of our SPEAR T-cells outside of the collaboration program or may impact on the regulatory requirements applicable to such SPEAR T-cells.

GSK and Novartis have publicly announced that Novartis has opt-in rights over GSK's current and future oncology research and development pipeline. As part of that announced transaction, GSK has sold the rights to GSK's marketed oncology portfolio, related R&D activities and the AKT Inhibitors currently in development. GSK has also agreed to grant Novartis preferred partner rights for co-development and commercialization of GSK's current and future oncology pipeline products for a period of 12.5 years from completion of the applicable transactions between GSK and Novartis. The agreement grants Novartis a right of first negotiation over the co-development or commercialization of any GSK "Relevant Development Product" in a major market. A "Relevant Development Product" as defined in the public announcement is a product in development for the treatment, palliation, diagnosis or prevention of all cancers, including immunology, epigenetics and treatment of solid or hematologic tumors (excluding

in all cases, vaccines). The right of first negotiation also lasts for 12.5 years from completion of the applicable transactions between GSK and Novartis and according to the public announcement applies where GSK decides to seek a third party partner for co-development or commercialization of, or to whom to divest rights to, a Relevant Development Product in a global or major market or where GSK proposes to seek a marketing authorization for a Relevant Development Product in a major market.

The existence of these opt-in rights could impact GSK's decision whether to exercise any option under our collaboration or the ability of GSK to take any clinical programs forward to the next stage, following the exercise of its option.

The relationship with GSK could also result in disputes arising between us and GSK which could result in costly arbitration or litigation and could impact the ongoing clinical programs or progress of such clinical programs. All intellectual property rights arising from the performance of the collaboration and license agreement will be jointly owned apart from intellectual property rights that we solely create. Both GSK and we have freedom to use jointly owned intellectual property rights.

The GSK collaboration programs relate to specific SPEAR T-cells directed to nominated targets. Should any of these programs not be successful or resulting clinical programs show a lack of efficacy or problems with safety, tolerability or durability of response, GSK may decide not to proceed further with such collaboration programs and our ability to obtain other partners for further development of such candidates or of new SPEAR T-cells could be significantly compromised.

We rely heavily on ThermoFisher and the technology that we license from them.

The ability to use the ThermoFisher Dynabeads® CD3/CD28 technology to isolate, activate and expand T cells is important to our ongoing ability to offer SPEAR T-cells. In December 2012, we entered into a series of license and sub-license agreements with Life Technologies Corporation (now part of ThermoFisher). These agreements provide us with a field-based exclusive license under certain intellectual property rights owned or controlled by ThermoFisher in relation to the methods of use of the ThermoFisher Dynabeads® CD3/CD28 technology to isolate, activate and expand T-cells and enable transfection of the T-cells with any TCR genes to manufacture our TCR products and use and sell those TCR products to treat cancer, infectious disease and/or autoimmune disease. We also have a field-based exclusive sub-license under certain other patents which cover the method of use of the Dynabeads® CD3/CD28 and are controlled by ThermoFisher under a head-license from the University of Michigan, the United States Navy and the Dana-Farber Cancer Institute.

In June 2016, we entered into a supply agreement with ThermoFisher for the supply of the Dynabeads® CD3/CD28 technology. The supply agreement runs until December 31, 2025. Under the supply agreement we are required to purchase our requirements for CD3/CD28 magnetic bead product exclusively from ThermoFisher for a period of five years and there are also minimum purchasing obligations. Despite having negotiated this supply agreement there is no certainty that ThermoFisher will be able to continue to supply the Dynabeads® CD3/CD28 technology at the times or at the levels we require or that facilities used by ThermoFisher for the manufacture and supply of the Dynabeads® CD3/CD28 technology will continue to be available to us which could impact the timing of supply of SPEAR T-cells or ability to manufacture SPEAR T-cells.

ThermoFisher has the right to terminate the above described agreements for material breach or insolvency. On termination of the license agreements, the supply agreement will also automatically terminate. If ThermoFisher terminates the exclusive license, sub-license and supply agreements or otherwise refuses or is unable to supply the Dynabeads® product, we will have to seek an alternative source of the beads or develop an alternative process methodology to enable supply of our SPEAR T-cells.

If the supply agreements with ThermoFisher is terminated or ThermoFisher is unable to supply the Dynabeads® CD3/CD28 technology for any reason, an alternative source may be difficult to find or more expensive, which may delay timeframes either for clinical programs or ultimately commercial supply of our SPEAR T-cells. A requirement to identify an alternative source may also

require a change in our regulatory application or additional regulatory testing to ensure that any alternative source is comparable and does not present any additional risk which could also result in our program experiencing delays and increased costs.

The sub-license agreement, in addition to having the same relevant exclusivity scope and field-based restrictions and many of the terms being equivalent to those set out in the main license agreement with ThermoFisher, also includes additional requirements that any manufacture of engineered TCR products for sale in the United States must occur in the United States and reserves rights for the United States government to use the technology in accordance with 35 U.S.C. § 200 et seq. and for the University of Michigan and Dana-Farber Cancer Institute to use the technology for non-commercial research purposes.

We rely on third parties to manufacture and supply our SPEAR T-cells, and we may have to rely on third parties to produce and process our SPEAR T-cells, if approved.

We currently rely on outside contract manufacturing organizations ("CMOs") to manufacture, supply and process our SPEAR T-cells. If one or more of these CMOs become unable or unwilling to continue to manufacture our engineered SPEAR T-cells (including any raw or intermediate material required for the manufacture of our end engineered SPEAR T-cell therapy) in the future, we may be forced to find an alternative third-party manufacturer, which we may not be able to do on commercially reasonable terms, if at all. Failure to identify a suitable alternative manufacturer could impact our business, financial condition or results of operations.

We rely on a limited number of third-party manufacturers for clinical trial product supplies, and if we are unable to develop our own commercial manufacturing facility for any commercial product supplies, we will be exposed to the following risks:

- We may be unable to contract with manufacturers on commercially acceptable terms or at all because the number of potential manufacturers is limited and the FDA, EMA and other comparable foreign regulators must approve any replacement manufacturer, which would require new testing and compliance inspections. In addition, a new manufacturer would have to be educated in, and develop substantially equivalent processes for, production of our SPEAR T-cells after receipt of any applicable regulatory approval.

- We may not be able to obtain lentiviral delivery manufacturing slots with third party contract manufacturers within the timescales we require for supply of lentiviral delivery vector or to obtain agreed dates for such manufacturing slots sufficiently in advance of the requirement for supply.

- Our third-party manufacturers might be unable to timely formulate and manufacture our SPEAR T-cells or produce the quantity and quality required to meet our clinical trial and commercial needs, if any.

- Contract manufacturers may not be able to execute our manufacturing procedures appropriately, or we may be unable to transfer our manufacturing processes to contract manufacturers successfully or without additional time and cost.

- Our future contract manufacturers may not perform as agreed, may be acquired by competitors or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our SPEAR T-cells. In addition contract manufacturers may not manufacture within agreed timescales for manufacture and/or may cancel pre-agreed manufacturing slots, which would result in delays in manufacturing and could require us to find replacement manufacturers which may not be available to us on favorable terms or at all.

- Manufacturers are subject to ongoing periodic unannounced inspection by the FDA, EMA, and other comparable foreign regulators and corresponding state agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards. Although we do not have day-to-day

control over third-party manufacturers' compliance with these regulations and standards, we are responsible for ensuring compliance with such regulations and standards.

- We may not own, or may have to share, the intellectual property rights to any improvements made by our third-party manufacturers in the manufacturing process for our SPEAR T-cells.

- Our third-party manufacturers could breach or terminate their agreement with us

- Our third-party manufacturers may cease to be able to do business with us (whether for insolvency or other reasons, including takeover, merger or acquisition) at a time when we are unable to source such manufacture elsewhere or at our own manufacturing facility.

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Certain raw materials or precursor materials used in the manufacture and supply of our SPEAR T-cells may come from sole source or limited source suppliers. For example, there are currently a limited number of third party manufacturers within the United States that can supply us with our lentiviral delivery vector, ThermoFisher is currently the only supplier of the Dynabeads® CD3/CD28 technology and PCT, LLC is currently the only manufacturer of our end SPEAR T-cell therapy. Should such suppliers be unable to supply or manufacture such raw materials or precursor materials either at all or within required timescales we may be unable to supply our SPEAR T-cells or such supply may be significantly delayed. Inability to obtain such raw materials or precursor materials may also necessitate changes in the manufacturing process used for supply of our SPEAR T-cells. Such changes to the manufacturing process may need to be developed internally or by a third party and may also require additional regulatory approvals to be obtained before they can be used for the manufacture and supply of our SPEAR T-cells for clinical trials.

Our contract manufacturers are also subject to the same risks we face in developing our own manufacturing capabilities, as described above. Each of these risks could delay our clinical trials, the approval, if any, of our SPEAR T-cells by the FDA or the commercialization of our SPEAR T-cells or result in higher costs or deprive us of potential product revenue. We have insurance to cover certain costs and expenses related to business interruption, which is capped at £3.0 million in the aggregate.

In addition, we will rely on third parties to perform release tests on our SPEAR T-cells prior to delivery to patients. If these tests are not appropriately performed and test data is not reliable, patients could be put at risk of serious harm.

We have a shared development history with Immunocore, and as a result jointly-own certain intellectual property rights which are required for our ongoing business.

Our TCR technology was originally developed by Avidex, which was subsequently acquired by Medigene in 2006. We were formed as a new, separate company and licensed our TCR technology for T-cell therapy from Medigene in July 2008. Immunocore was subsequently formed as a new separate company and acquired the TCR technology for soluble TCRs from Medigene later in 2008 to develop soluble TCR proteins. Immunocore owns ordinary shares in Adaptimmune. Certain of our shareholders also hold shares in Immunocore. Our scientific founder and advisor, Bent Jakobsen, is also an employee of Immunocore.

Both Adaptimmune and Immunocore focus on technologies that are based on TCR therapies. Each company focuses on distinct applications of, and utilizes different, TCRs. Immunocore uses soluble TCRs whereas Adaptimmune uses cellular SPEAR T-cells. Both soluble TCRs and Adaptimmune's SPEAR T-cells rely on the engineering of TCRs to create affinity-enhanced TCRs. In Adaptimmune's case, once the engineered affinity-enhanced TCR has been generated, the gene encoding that engineered TCR is transduced into patient T cells. With soluble TCRs, there is no transduction. For soluble TCRs, the engineered affinity-enhanced TCRs are combined with an antibody fragment, anti-CD3, and it is this combined TCR/anti- CD3 candidate that is then used to treat patients directly. The combined candidates are called ImmTACs. As a result, the end therapeutic candidates being developed by each company are different in terms of end structure, affinity, require different manufacturing and administration routes and are likely to have different properties in patients. For example, ImmTACs do not persist beyond a few hours in a patient following administration, whereas Adaptimmune's TCR therapeutics have been shown to persist in patients for years; ImmTACs are likely to require higher amounts of target peptide to be present and hence Adaptimmune's TCR therapeutics may address cancer cells with lower levels of antigen; ImmTACs rely on activating the patient's existing T cells through an anti-CD3-CD3 interaction, whereas Adaptimmune's SPEAR T-cells activate T cells through direct binding to the target peptide and this results in a different mechanism of action.

Notwithstanding the differences between Immunocore's and Adaptimmune's end products, both companies may develop products or therapies that target the same peptide and are directly competitive and/or address the same indications and patient populations. For example, both companies could develop therapeutic candidates to the same peptide target and hence have a product addressing the same patient populations in the same way as any other competing technology. In addition, both Immunocore and Adaptimmune have entered into collaboration agreements with GSK, which could decide over time to devote greater time and resources to Immunocore at the expense of Adaptimmune.

Under the terms of a target collaboration agreement which terminated as of March 1, 2017, we will continue to share a database of identified targets with Immunocore which resulted from the joint target identification efforts under that agreement. The contents of this target database are highly confidential and if disclosed to a third party, either as a result of a breach of the confidentiality terms between us and Immunocore or through a change of control in Immunocore, our business could be adversely impacted.

In addition, many of the patents relating to our underlying core technology in TCR engineering, are co-owned by us and Immunocore pursuant to a separate assignment and license agreement. Under this agreement, each of Immunocore and Adaptimmune utilize the jointly owned patents and know-how, with Adaptimmune focused on the treatment of patients with engineered SPEAR T-cells and Immunocore focused on the treatment of patients with soluble TCRs. Under the agreement, each of Immunocore and Adaptimmune grants the other an exclusive, royalty-free, irrevocable license, with the right to sub-license, to certain jointly owned

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patents and know-how. However, there is the potential that Immunocore could develop a soluble TCR product targeting the same cancer target that one of our SPEAR T-cells is targeting, and therefore compete directly with us.

We rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval of or commercialize our SPEAR T-cells.

We depend upon independent investigators and collaborators, such as universities, medical institutions, CROs and strategic partners to conduct our preclinical programs and sponsored clinical trials under agreements with us. We expect to have to negotiate budgets and contracts with CROs and trial sites (either directly or through a third party consultant), which may result in delays to our development timelines and increased costs. We rely heavily on these third parties over the course of our clinical trials, and we do not have day-to-day control of their activities. Nevertheless, we are responsible for ensuring that each of our trials is conducted in accordance with applicable protocols and legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with cGCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for SPEAR T-cells in clinical development. Regulatory authorities enforce these cGCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of these third parties fail to comply with applicable cGCP regulations and guidelines, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable

foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot provide assurances that, upon inspection, such regulatory authorities will determine that any of our clinical trials comply with the cGCP regulations. In addition, our clinical trials must be conducted with biologic product produced under cGMPs and will require a large number of subjects. Our failure or any failure by these third parties to comply with these regulations or to support BLA for approval of any of our SPEAR T-cells for the treatment of a sufficient number of patients may require us to repeat clinical trials, which would delay the regulatory approval process. Moreover, our business may be implicated if any of these third parties violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

Any third parties conducting our clinical trials are not and will not be our employees and, except for remedies available to us under our agreements with such third parties which could be limited, we cannot control whether or not they devote sufficient time and resources to our ongoing clinical trials and preclinical programs. These third parties may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug or biologic development activities, which could affect their performance on our behalf. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to complete development of, obtain regulatory approval of, or successfully commercialize our SPEAR T-cells. As a result, our financial results and the commercial prospects for our SPEAR T-cells would be harmed, our costs could increase and our ability to generate revenue could be delayed.

Switching or adding third parties to conduct our clinical trials involves substantial cost and requires extensive management time and focus. In addition, there is a natural transition period when a new third party commences work. As a result, delays may occur, which can materially impact our ability to meet our timelines for bringing our SPEAR T-cells to market, if at all. Certain activities relating to the NY-ESO SPEAR T-cell program will transfer to GSK and other third parties as part of the transition of the NY-ESO SPEAR T-cell program to GSK. This may result in delays or changes to the NY-ESO clinical program.

In addition to our Company sponsored clinical programs, our NY-ESO TCR therapeutic has also been used in an investigator-initiated clinical program funded by the European Union, referred to as the ATTACK 2 program. The therapy, which was produced under a different manufacturing process than Adaptimmune's NY-ESO TCR therapy and was administered under a different protocol, was being evaluated for the treatment of patients with advanced gastro-esophageal cancer for the first time. To date, two patients have been treated under this protocol, one of whom passed away 46 days after initial treatment. Said patient experienced enterocolitis and bone marrow failure followed by fatal gangrenous gastrointestinal necrosis and hemorrhage. The investigator determined there was a reasonable possibility that these events were caused by study treatment. Enrollment in the trial was temporarily paused pending investigation of the patient fatality but an independent data monitoring committee has since recommended that recruitment can resume.

We rely on third parties to obtain reagents and raw materials.

The manufacture of our SPEAR T-cells requires access to a number of reagents and other raw materials from third parties. Such third parties may refuse to supply such reagents or other raw materials or alternatively refuse to supply on commercially reasonable terms. There may also be capacity issues at such third-party suppliers that impact our ability to increase production of our SPEAR T-cells.

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Some of the materials used in the manufacture and processing of our SPEAR T-cells may only be supplied by one or a few vendors, which means that, should those vendors be unable to supply, for whatever reason, our ability to manufacture SPEAR T-cells and progress SPEAR T-cells through clinical trials could be severely impacted and result in additional delays. Such failure to supply could also impact other supply relationships with other third parties and potentially result in additional payments being made or required in relation to such delays. In addition, where any raw material or precursor material (including, for example, lentiviral delivery vector, medium or other essential raw material) is currently supplied by one or a few vendors, replacing such raw material or precursor or finding alternative vendors may not be possible or may significantly impact on the timescales for manufacture and supply of our SPEAR T-cells. Even where alternative materials or precursors or alternative vendors are identified, such alternative materials, precursors or vendors will need to be properly assessed, validated and qualified and additional regulatory approvals may also need to be obtained all of which could result in significant delays to the supply of our SPEAR T-cells or an inability to supply SPEAR T-cells within anticipated timescales, if at all.

As part of the transition of the NY-ESO SPEAR T-cell program to GSK, supply of reagents and raw materials will transfer to GSK. GSK will be responsible for sourcing its own reagents and raw materials. We cannot guarantee that GSK will be able to source the required reagents and raw materials in the time periods currently envisaged which may result in a delay to the transition of the NY-ESO SPEAR T-cell program to GSK.

Risks Related to Our Intellectual Property

Our SPEAR T-cells could be at risk of biosimilar development.

Expedited routes or abbreviated procedures for obtaining regulatory approval for products aiming to target the same cancer peptide as our SPEAR T-cells may be available to third parties, which we cannot control or prevent. For example, third parties could develop affinity-enhanced TCRs binding to the same targets and regulatory authorities may accept that they are interchangeable with our corresponding SPEAR T-cells and, as a result, grant regulatory approval for such competing products. Entry into the market of such competing products may impact the price of our SPEAR T-cells and the extent of commercialization possible in relation to such SPEAR T-cells.

We may be forced to litigate to enforce or defend our intellectual property rights, and/or the intellectual property rights of our licensors.

We may be forced to litigate to enforce or defend our intellectual property rights against infringement and unauthorized use by competitors, and to protect our trade secrets. In so doing, we may place our intellectual property at risk of being invalidated, held unenforceable, narrowed in scope or otherwise limited. Further, an adverse result in any litigation or defense proceedings may increase the risk of non-issuance of pending applications. In addition, if any licensor fails to enforce or defend its intellectual property rights, this may adversely affect our ability to develop and commercialize our SPEAR T-cells and to prevent competitors from making, using, and selling competing products. Any such litigation could be very costly and could distract our management from focusing on operating our business. The existence and/or outcome of any such litigation could harm our business, results of operations and financial condition.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential and proprietary information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our ADSs.

We may not be able to protect our proprietary technology in the marketplace or the cost of doing so may be prohibitive or excessive.

Our success will depend, in part, on our ability to obtain patents, protect our trade secrets and operate without infringing on the proprietary rights of others. We rely upon a combination of patents, trade secret protection (i.e., know-how), and confidentiality agreements to protect the intellectual property of our SPEAR T-cells. The scope and validity of patents in the pharmaceutical field involve complex legal and scientific questions and can be uncertain. Where appropriate, we seek patent protection for certain aspects of our SPEAR T-cells and technology. Filing, prosecuting and defending patents throughout the world would be prohibitively expensive, so our policy is to patent technology in jurisdictions with significant commercial opportunities. However, patent protection may not be available for some of the SPEAR T-cells or technology we are developing. If we must spend significant time and money protecting or enforcing our patents, designing around patents held by others or licensing, potentially for large

fees, patents or other proprietary rights held by others, our business results of operations and financial condition may be harmed. We may not develop additional proprietary products that are patentable.

Many companies have encountered significant problems in protecting and enforcing intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents

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and other intellectual property rights, particularly those relating to pharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

In addition, patents have a limited lifespan. In most countries, including the United States, the standard expiration of a patent is 20 years from the effective filing date. Various extensions of patent term may be available in particular countries; however, in all circumstances the life of a patent, and the protection it affords, has a limited term. If we encounter delays in obtaining regulatory approvals, the period of time during which we could market a product under patent protection could be reduced. We expect to seek extensions of patent terms where these are available in any countries where we are prosecuting patents. Such possible extensions include those permitted under the Drug Price Competition and Patent Term Restoration Act of 1984 in the United States, which permits a patent term extension of up to five years to cover an FDA-approved product. The actual length of the extension will depend on the amount of patent term lost while the product was in clinical trials. However, the applicable authorities, including the FDA in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and non-clinical data, and then may be able to launch their product earlier than might otherwise be the case.

Any loss of, or failure to obtain, patent protection could have a material adverse impact on our business. We may be unable to prevent competitors from entering the market with products that are similar to or the same as our SPEAR T-cells.

Further given that our technology relates to the field of genetic engineering, political pressure or ethical decisions may result in a change to the scope of patent claims for which we may be eligible. Different patent offices throughout the world may adopt different procedures and guidelines in relation to what is and is not patentable and as a result different protection could be obtained in different areas of the world which may impact our ability to maximize commercialization of our technology.

We may also incur increased expenses and cost in relation to the filing and prosecution of patent applications where third parties choose to challenge the scope or oppose the grant of any patent application or, following grant, seek to limit or invalidate any patent. On April 13, 2015, we received notification of a third party observation filed against one of the patent applications (PCT/GB2013/053320) jointly owned with Immunocore and covering one aspect of our underlying processes. The third party observation cites a reference which the third party considers to be novelty destroying in relation to claims 1-14 of our patent application. Following this observation, an examination report was issued by the patent office and we have responded to the cited observations in the examination report in full. Any increased prosecution or defense required in relation to such patents and patent applications, whether relating to this third party observation or any other third party challenge or opposition, entails increased cost and resource commitment to the business and may result in patents and patent applications being abandoned, invalidated or narrowed in scope.

We may be unable to adequately prevent disclosure of trade secrets and other proprietary information.

We rely on trade secrets to protect our proprietary know-how and technological advances, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. We rely, in part, on confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to protect our trade secrets and other proprietary information. These agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover our trade secrets and proprietary information. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights. Failure to obtain or maintain trade secret protection, or failure to adequately protect our intellectual property, could enable competitors to develop generic products or use our proprietary information to develop other products that compete with our SPEAR T-cells or have additional, material adverse effects upon our business, results of operations and financial condition.

In addition, we provide samples to third parties under material transfer agreements, including to research institutions or other organizations that we cannot control. There is a risk that such third parties could disclose details of those samples or carry out further research in relation to provided samples which results in intellectual property rights that block our future freedom to operate, and to which we may not be able to obtain a license on commercially acceptable terms or at all. In addition, provision of samples and our confidential information to such parties could facilitate or assist such parties in development of competing products.

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If third parties claim that our activities or products infringe upon their intellectual property, our operations could be adversely affected.

There is a substantial amount of litigation, both within and outside the United States, involving patents and other intellectual property rights in the pharmaceutical industry. We may, from time to time, be notified of claims that we are infringing upon patents, trademarks, copyrights, or other intellectual property rights owned by third parties, and we cannot provide assurances that other companies will not, in the future, pursue such infringement claims against us or any third-party proprietary technologies we have licensed. If we were found to infringe upon a patent or other intellectual property right, or if we failed to obtain or renew a license under a patent or other intellectual property right from a third party, or if a third party that we were licensing technologies from was found to infringe upon a patent or other intellectual property rights of another third party, we may be required to pay damages, including triple damages if the infringement is found to be willful, suspend the manufacture of certain SPEAR T-cells or reengineer or rebrand our SPEAR T-cells, if feasible, or we may be unable to enter certain new product markets. Any such claims could also be expensive and time-consuming to defend and divert management's attention and resources. Our competitive position could suffer as a result. In addition, if we have declined to enter into a valid non-disclosure or assignment agreement for any reason, we may not own an invention or intellectual property rights and may not be adequately protected. Although we have reviewed certain third-party patents and patent filings that we believe may be relevant to our SPEAR T-cells, we have not conducted a full freedom-to-operate search or analysis for such SPEAR T-cells, and we may not be aware of patents or pending or future patent applications that, if issued, would block us from commercializing our SPEAR T-cells. Thus, we cannot guarantee that we can successfully commercialize SPEAR T-cells in a way that will not infringe any third party's intellectual property.

Licenses may be required from third parties in relation to any SPEAR T-cells developed or commercialized by us.

We may identify third-party intellectual property rights that are required to enable the further development, commercialization, manufacture or development of our SPEAR T-cells. Licenses to such intellectual property rights may or may not be available on commercial terms that are acceptable to us. As a result we may incur additional license fees for such intellectual property rights, or the cost and expenses to identify an alternative route for commercialization, that does not require the relevant third-party intellectual property rights, or the cost and diversion of resources required to challenge any such third party intellectual property rights.

We have identified three third party European patent applications which relate to high affinity TCR proteins and methods. Two of these patent applications have been amended and the claims are not relevant to our SPEAR T-cell technology. The final application includes broad claims which we do not currently perceive as relevant to our business. We have previously filed third party observations in relation to these claims and have recently filed further third party observations arguing on the basis of lack of support, lack of clarity, disallowed added matter, non-entitlement to priority, and lack of inventive step. This final application was subsequently allowed with narrowed claims which are of no relevance to Adaptimmune's business.

We have also identified a family of third party patents under which we may require a license in relation to a structural component of our lentiviral vector (cPPT) prior to any commercialization of SPEAR T-cells. We believe such licenses are available and we are in discussions to procure a license or freedom to operate under the relevant patent rights.

We may also require licenses under third-party patents covering certain peptide sequences or the use of those peptides. Such licenses will require payment of sums by us and we cannot guarantee that the terms of such licenses will be available on commercially acceptable terms or at all, which could limit the peptides which can be used by us and the efficacy of the final affinity- enhanced TCRs that we are able to offer.

As we change, develop and modify our manufacturing processes we may identify further third-party patents covering those developments and modifications. We cannot guarantee that we will be able to obtain licenses under these third-party patents or other intellectual property rights and as a result we may not be able to undertake the developments of modifications that we wish, either at all or in the timescales we require. This could ultimately impact our ability to deliver commercial T-cell products at the cost required.

Further or other third-party patents and patent applications may be identified from time to time that require prospective action by us to prevent the grant of broad claims. Such prospective action requires time and expense and also impacts on the resources generally available to us.

Where we license certain technology from a third party, the prosecution, maintenance and defense of the patent rights licensed from such third party may be controlled by the third party which may impact the scope of patent protection which will be obtained or enforced.

Where we license patent rights or technology from a third-party, control of such third party patent rights may vest in the licensor, particularly where the license is non-exclusive or field restricted. This may mean that we are not able to control or affect the

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scope of the claims of any relevant third-party patent or have control over any enforcement of such a patent. Where a licensor brings an enforcement action, this could negatively impact our business or result in additional restrictions being imposed on the license we have and the scope of such license, or result in invalidation or limitation of the scope of the licensed patent. In addition, should we wish to enforce the relevant patent rights against a third person, we may be reliant on consent from the relevant licensor or the cooperation of the licensor. The licensor may refuse to bring such action and leave us unable to restrict competitor entry into the market.

Issued patents protecting our SPEAR T-cells could be found invalid or unenforceable if challenged in court or at the USPTO.

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent protecting one of our SPEAR T-cells, the defendant could counterclaim that the patent protecting our SPEAR T-cell, as applicable, is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our SPEAR T-cells. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we, our patent counsel and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection for our SPEAR T-cells. Such a loss of patent protection could have a material adverse impact our business, financial condition and results of operations.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. For example, in the recent case, Assoc. for Molecular Pathology v. Myriad Genetics, Inc., the U.S. Supreme Court held that certain claims to DNA molecules are not patentable. While we do not believe that any of the patents owned or licensed by us will be found invalid based on this decision, we cannot predict how future decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents.

Our ability to protect our intellectual property rights in territories outside of the United States may vary and thus affect our ability to obtain revenue from our SPEAR T-cells.

Filing, prosecuting and defending patents on our SPEAR T-cells in all countries throughout the world would be prohibitively expensive, and the extent of intellectual property rights may be less extensive than those which can be obtained in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biopharmaceutical products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Risks Related to Employee Matters and Managing Growth

We depend upon our key personnel and our ability to attract and retain employees.

We are heavily dependent on the ongoing employment and involvement of certain key employees in particular, James Noble, our Chief Executive Officer, Dr. Helen Tayton-Martin, our Chief Business Officer, Dr. Rafael Amado, our Chief Medical Officer, Dr. Gwendolyn Binder-Scholl, our Chief Technology Officer, and Adrian Rawcliffe, our Chief Financial Officer. We do not hold key-man insurance for our senior managers. In addition, James Noble and Dr. Helen Tayton-Martin, are in a personal relationship. They are our co-founders, two of our most senior executive officers and are a vital part of our business. If the personal relationship ended or they could otherwise not amicably work with each other, one of them may decide to leave us which would materially harm our business.

In addition, we anticipate a requirement to expand the personnel available to us very rapidly in order to achieve our planned business activities and aims. Such expansion is dependent on our ability to recruit experienced and suitably trained employees or consultants, and to retain such employees on a long term basis. Our ability to take our existing pipeline of TCR therapeutics and to meet the demands of the GSK collaboration may be compromised or delayed where we are unable to recruit sufficient personnel on a timely basis.

To induce employees to remain at our company, in addition to salary and cash incentives, we have provided share options that vest over time, with higher awards of share options being made to senior employees. The value to employees of share options that vest over time may be significantly affected by movements in our share price that are beyond our control, and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, members of our management, scientific and development teams may terminate their employment with us on short notice. Although we have employment agreements with all of our employees, in the United Kingdom, these employment agreements provide for mutual nine months' notice periods in the case of Mr. Noble and Dr. Tayton-Martin; mutual three months' notice periods in the case of senior managers and mutual one month notice periods for all other employees. In the United States, the employment agreements provide for at-will employment except that, under their employment agreements, Dr. Amado, Dr. Binder-Scholl, Mr. Rawcliffe and William Bertrand, our Chief Operating Officer, must provide 60 days' written notice for termination without cause. This means that any of our employees in the United States, except for Dr. Amado, Dr. Binder-Scholl, Mr. Rawcliffe and Mr. Bertrand, could leave our employment at any time, with or without notice. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level and senior managers as well as junior, mid-level and senior scientific and medical personnel.

We will need to grow the size and capabilities of our organization, and we may experience difficulties in managing this growth.

As of September 30, 2017, we had 335 full-time equivalent employees. As our development and commercialization plans and strategies develop, we must add a significant number of additional managerial, operational, sales, marketing, financial, and other personnel. Future growth will impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining, and motivating additional employees;
- managing our internal development efforts effectively, including the clinical and FDA review process for our SPEAR T-cells, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, financial and management controls, reporting systems, and procedures.

Our future financial performance and our ability to commercialize our SPEAR T-cells will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities.

We also rely on third parties to provide certain of our manufacturing and quality capabilities. See "Risks Related to Our Reliance Upon Third Parties."

If we are not able to effectively expand our organization by hiring new employees and expanding our groups of consultants and contractors, we may not be able to successfully implement the tasks necessary to further develop and commercialize our SPEAR T-cells and, accordingly, may not achieve our research, development, and commercialization goals.

Expansion of our business has necessitated a move in premises both in the United Kingdom and in the United States. While the move in the United States has occurred, work is still ongoing to enable the operation of these premises as a manufacturing facility.

The move in the United Kingdom occurred in the second quarter of 2017. The move required transfer of all equipment, cell lines, tissues and materials to the new premises and re-validation and calibration of equipment. Any failure to properly validate or calibrate equipment or any destruction of materials transferred to the new premises may result in additional delays to the work carried out in the United Kingdom.

We are intending to open a manufacturing facility of our own which may be delayed or which may result in increased costs being incurred by the company

We are in the process of developing a manufacturing facility for our SPEAR T-cell products within our Navy Yard facility in Philadelphia, United States. As a company we have never previously developed our own manufacturing facility, operated our own manufacturing facility or manufactured SPEAR T-cells ourselves. We cannot guarantee that we will be successful in developing SPEAR T-cell manufacturing capability at all or within the currently planned timescales or resource levels or that the regulatory authorities, in particular the FDA, will approve our ability to manufacture SPEAR T-cells at the Navy Yard facility.

Our ability to successfully manufacture our own SPEAR T-cells at the Navy Yard facility within a reasonable period of time and within currently projected costs is dependent on a number of factors including:

- our ability to recruit the required employees at a suitable level and experience and within required timescales and to maintain employment of such required employees;
- our ability to obtain regulatory approval for the facility and for the manufacture of SPEAR T-cells at the facility and to satisfy regulatory authorities on an ongoing basis;
- our ability to manufacture SPEAR T-cells reliably and reproducibly and to timescales sufficient to support required patient administration;
- our ability to manufacture SPEAR T-cells in compliance with the applicable regulatory requirements, including requirements applicable in both the United States and European Union;

- our ability to develop internal quality controls and processes sufficient to enable manufacture and supply of SPEAR T-cells at our Navy Yard facility;
- our ability to establish comparability with currently used manufacturing processes and for such comparability data to be accepted by the appropriate regulatory authorities;
- our ability to be able to fund the ongoing development including equipment requirements necessary for successful manufacture of SPEAR T-cells at our facility.

Should we be unable to successfully start manufacture of SPEAR T-cells at our facility and obtain required regulatory approvals within the timescales currently anticipated this could result in delays to the supply of SPEAR T-cells for our clinical programs. Should any of our third party manufacturers cease to be able to supply SPEAR T-cells prior to the time at which our own manufacturing facility is able to produce SPEAR T-cells for use in our clinical programs, then we will be unable to support such clinical programs until alternative manufacturing capability is secured. The cost of developing, out-fitting and operating a manufacturing facility may also be greater than currently anticipated and we may require additional capital for the completion of the manufacturing facility which may result in the need for us to raise additional funds earlier than expected.

We cannot guarantee that we will be successful in manufacturing SPEAR T-cells at all or in a manner that complies with regulatory requirements. For example, there is a risk that any SPEAR T-cells we manufacture are contaminated or are otherwise incorrectly manufactured resulting in injury or death to any patient receiving those SPEAR T-cells. We may also face difficulties in properly tracking and administering our SPEAR T-cells to patients, again potentially resulting in injury or death to any patient receiving those SPEAR T-cells.

We may also be unable to support use of our own manufacturing facility together with third party suppliers and become the sole supply for our SPEAR T-cells. Any inability to supply SPEAR T-cells at the required levels and to the required specifications, will result in delays to clinical trials and may result in holds being applied to such clinical trials.

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We expect to face intense competition, often from companies with greater resources and experience than we have.

Immunotherapy is an intensely competitive area with many of the large pharmaceutical companies having products and therapies already in clinical trials for cancer indications and autoimmune diseases. The larger resources of these companies may enable them to take therapies all the way through the regulatory process, while we will require additional investment or input from collaborators such as GSK to take our SPEAR T-cells through the regulatory process and commercialization. Smaller or early-stage companies may also prove to be significant competitors, particularly if such companies align with pharmaceutical partners and compete for patients. Results obtained by such competitors in clinical trials could also impact our ability to obtain regulatory approval or delay such approval in the event of a safety issue or other negative clinical result associated with similar T-cell or SPEAR T-cells.

In particular, we face competition from chimeric antigen receptor T-cell, or CAR-T, technologies from companies such as Novartis AG/University of Pennsylvania, bluebird bio, Inc./Celgene Corporation/Baylor College of Medicine, Intrexon Corporation/Ziopharm Oncology, Inc./MD Anderson Cancer Center, Juno Therapeutics, Inc./Celgene Corporation/Fred Hutchinson Cancer Research Center/Memorial Sloan Kettering Cancer Center, Cellectis SA/Pfizer Inc./Servier Laboratories and Bellicum Pharmaceuticals Inc. In the TCR space, we face competition from Juno Therapeutics, Inc., Gilead, Medigene AG/Bluebird Bio Inc., Bellicum Pharmaceuticals Inc., Eureka Therapeutics Inc., Immatics and Takara Bio, Inc. Gilead as a result of its acquisition of Kite Pharma has a range of TCR products in pre-clinical development and Takara Bio, Inc. have TCR product candidates in early clinical studies targeting NY-ESO-1 and MAGE-A4. Takara Bio Inc has announced plans to target the launch of its NY-ESO-1 product in Japan in 2021. Medigene AG has reported development of a PRAME TCR therapeutic candidate, which is schedule to enter clinical trials at the end of 2017, and is also involved in the development of a MAGE-A1 TCR which is due to enter clinical trials later in 2017. Eureka Therapeutics Inc. has announced the development of CAR-T products which target peptide-HLA complexes. They have developed CAR-Ts targeting the same NY-ESO and AFP peptides as are targeted by our SPEAR T-cells. However development still appears to be in the early stages and limited data is available to assess impact on our own SPEAR T-cells, if any. Ziopharm Oncology, Inc. has announced the development of a TCR mimetic CAR-T targeting NY-ESO-1 and has other CAR-T, NK-cell and TCR T-cell programs in development. Adicet Bio/Regeneron Inc. have announced plans to develop TCR immunotherapy products directed to MHC-peptide complexes and Tactiva Therapeutics are developing CD4-TCRs and CD8-TCRs targeting solid tumors expressing NY-ESO. In China. Guangzhou Xiangxue Pharmaceutical are developing a lentiviral transduced NY-ESO-1 TCR for advanced lung cancer for the Chinese market. Should Gilead, Takara Bio, Inc. or any of our other competitors be successful in advancing a TCR product targeting NY-ESO-1 through development, GSK's ability to develop and advance the NY-ESO SPEAR T-cell could be adversely affected. We may also face competition from other non-TCR and non-cell based treatments such as antibody and check point inhibitor therapies offered by companies such as Amgen Inc., AstraZeneca plc, Bristol-Myers Squibb Company, Incyte Corporation, Merck & Co., Inc., Amgen/Immatics and Roche Holding Ltd. Even if we obtain regulatory approval for our SPEAR T-cells, we may not be the first to market, which could affect both demand for and price of our SPEAR T-cells.

Although Immunocore is focused on soluble TCRs rather than engineered SPEAR T-cells, we could also face competition from Immunocore if it develops or acquires products directed at the same targets or indications as our TCR therapeutic product candidates.

Moreover, many of our employees have come from a shared background within Immunocore and there is an awareness within Immunocore of certain of our confidential information on the technology platform controlled through confidentiality agreements. This knowledge could be used by Immunocore to facilitate its own developments or to target competitive products against our products placing it in a preferable position as compared to third party competitors.

The results of the United Kingdom's referendum on withdrawal from the European Union may have a negative effect on global economic conditions, financial markets and our business.

On June 23, 2016, a majority of voters in the United Kingdom elected to withdraw from the European Union in a national referendum. Intention to withdraw from the European Union was provided to the European Council on March 29, 2017. This notification has triggered a negotiation period for the terms of withdrawal from the European Union that may last for at least two years. The decision to withdraw from the European Union has created significant uncertainty about the future relationship between the United Kingdom and the European Union, including with respect to the laws and regulations that will apply as the United Kingdom determines which European Union laws to replace or replicate in the event of a withdrawal. These developments, or the perception that any of them could occur, may have a material adverse effect on global economic conditions and the stability of global financial markets, and may significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets. Any of these factors could depress economic activity and restrict our access to capital, which could have a material adverse effect on our business, financial condition and results of operations and reduce the price of our securities. In addition, currency exchange rates in the pounds sterling and the euro with respect to each other and the U.S. dollar have already been adversely affected by these developments. Should this foreign exchange volatility continue, it could cause volatility in our quarterly financial results which may affect the market price of our ADSs.

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Failure of our information technology systems could significantly disrupt the operation of our business.

Our ability to execute our business plan and to comply with regulators' requirements with respect to data control and data integrity, depends, in part, on the continued and uninterrupted performance of our information technology systems and similar systems used by third-party providers that we rely on. These systems are vulnerable to damage from a variety of sources, including telecommunications or network failures, malicious human acts and natural disasters. Moreover, despite network security and back-up measures, some of our servers are potentially vulnerable to physical or electronic break-ins, computer viruses and similar disruptive problems. Despite the precautionary measures we have taken to prevent unanticipated problems that could affect our information systems, sustained or repeated system failures or problems arising during the upgrade of any of our information systems that interrupt our ability to generate and maintain data, and in particular to operate our proprietary technology platform, could adversely affect our ability to operate our business. In addition, where disruption to such systems occurs at third-party providers, we may have limited ability to find alternative providers in any required timeframes or at all, and such disruption could significantly affect our ability to proceed with clinical or analytical or development programs.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations and those of our third party suppliers and collaborators could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes or other extreme weather conditions, medical epidemics, labor disputes or other business interruptions. While the company has business interruption insurance policies in place, any interruption could seriously harm our ability to timely proceed with any clinical programs or to supply SPEAR T-cells on a commercial basis or for use in clinical programs.

We are exposed to risks related to currency exchange rates.

We conduct a significant portion of our operations within the United Kingdom in both U.S. dollars and pounds sterling and our arrangements with GSK are denominated in pounds sterling. Changes in currency exchange rates have had and could have a significant effect on our operating results. Exchange rate fluctuations between the U.S. dollar and local currencies create risk in several ways, including the following: weakening of the pound sterling may increase the cost of overseas research and development expenses and other costs outside the United Kingdom; strengthening of the U.S. dollar may decrease the value of any future revenues denominated in other currencies. Effects of exchange rates on transactions and cash deposits held in a currency other than the functional currency of a subsidiary can distort our financial results; and commercial pricing and profit margins are affected by currency fluctuations.

We may be classified as a passive foreign investment company in any taxable year and U.S. holders of our ADSs could be subject to adverse U.S. federal income tax consequences.

The rules governing passive foreign investment companies, or PFICs, can have adverse effects for U.S. federal income tax purposes. The tests for determining PFIC status for a taxable year depend upon the relative values of certain categories of assets and the relative amounts of certain kinds of income. The determination of whether we are a PFIC depends on the particular facts and circumstances (such as the valuation of our assets, including goodwill and other intangible assets) and may also be affected by the application of the PFIC rules, which are subject to differing interpretations. Based on our estimated gross income, the average value of our assets, including goodwill and the nature of our active business, we do not believe that the Company was classified as a PFIC for U.S. federal income tax purposes for the U.S. taxable year ended December 31, 2016. There can be no assurance, however, that we will not be considered to be a PFIC for this taxable year or any particular year in the future because PFIC status is factual in nature, depends upon factors not wholly within our control, generally cannot be determined until the close of the taxable year in question, and is determined annually.

If we are a PFIC, U.S. holders of our ADSs would be subject to adverse U.S. federal income tax consequences, such as ineligibility for any preferred tax rates on capital gains or on actual or deemed dividends, interest charges on certain taxes treated as deferred, and additional reporting requirements under U.S. federal income tax laws and regulations. A U.S. holder of our ADSs may be able to mitigate some of the adverse U.S. federal income tax consequences described above with respect to owning the ADSs if we are classified as a PFIC, provided that such U.S. investor is eligible to make, and validly makes, a "mark-to-market" election. In certain circumstances a U.S. Holder can make a "qualified electing fund" election to mitigate some of the adverse tax consequences described with respect to an ownership interest in a PFIC by including in income its share of the PFIC's income on a current basis. However, we do not currently intend to prepare or provide the information that would enable a U.S. Holder to make a qualified electing fund election.

Investors should consult their own tax advisors regarding all aspects of the application of the PFIC rules to our ordinary shares.

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Risks Related to Ownership of our American Depositary Shares (ADSs)

The price of our ADSs may be volatile.

Many factors may have a material adverse effect on the market price of the ADSs, including but not limited to:

- the commencement, enrollment or results of our planned clinical trials;
- the loss of any of our key scientific or management personnel;
- announcements of the failure to obtain regulatory approvals or receipt of a complete response letter from the FDA;
- announcements of undesirable restricted labeling indications or patient populations, or changes or delays in regulatory review processes;
- announcements of therapeutic innovations or new products by us or our competitors;
- adverse actions taken by regulatory agencies with respect to our clinical trials, manufacturing supply chain or sales and marketing activities;
- changes or developments in laws or regulations applicable to our SPEAR T-cells;
- any adverse changes to our relationship with licensors, manufacturers or suppliers;
- the failure of our testing and clinical trials;
- unanticipated safety concerns;
- the failure to retain our existing, or obtain new, collaboration partners;
- announcements concerning our competitors or the pharmaceutical industry in general;
- the achievement of expected product sales and profitability;

- the failure to obtain reimbursements for our SPEAR T-cells, if approved for marketing, or price reductions;
- manufacture, supply or distribution shortages;
- actual or anticipated fluctuations in our operating results;
- our cash position;
- changes in financial estimates or recommendations by securities analysts;
- potential acquisitions;
- the trading volume of ADSs on Nasdaq Global Select Market, or Nasdaq;
- sales of our ADSs by us, our executive officers and directors or our shareholders in the future;
- general economic and market conditions and overall fluctuations in the U.S. equity markets;
- the change in our status from reporting as a foreign private issuer to reporting as a U.S. domestic company now using Securities Act and Exchange Act U.S. domestic company forms; and
- changes in accounting principles.

In addition, the stock market in general, and Nasdaq and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these

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companies. Broad market and industry factors may negatively affect the market price of our ADSs, regardless of our actual operating performance. Further, a decline in the financial markets and related factors beyond our control may cause the price of our ADSs to decline rapidly and unexpectedly.

Substantial future sales of our ADSs in the public market, or the perception that these sales could occur, could cause the price of the ADSs to decline and dilute shareholders.

Substantial future sales of our ADSs in the public market, or the perception that these sales could occur, could cause the market price of the ADSs to decline. Sales of a substantial number of our ADSs in the public market could occur at any time. Moreover, certain shareholders have rights under an investors rights agreement dated as of February 23, 2015, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other shareholders. In addition, we have registered an aggregate of 66,999,747 ordinary shares that we may issue under our equity compensation plans and, as a result, they can be freely sold in the public market upon issuance and following conversion into ADSs, but subject to volume limitations applicable to affiliates under Rule 144. Additionally, the majority of ordinary shares that may be issued under our equity compensation plans also remain subject to vesting in tranches over a four year period. As of September 30, 2017, an aggregate of 28,827,100 options over our ordinary shares had vested and become exercisable. If a large number of our ADSs are sold in the public market after they become eligible for sale, the sales could reduce the trading price of our ADSs and impede our ability to raise capital in the future.

We incur increased costs as a result of being a public company whose ADSs are publicly traded in the United States and our management must devote substantial time to public company compliance.

As a U.S. public company whose ADSs trade on Nasdaq, we have incurred and will continue to incur significant legal, accounting, insurance and other expenses. We are subject to the reporting requirements of the Exchange Act, which requires, among other things, that we file with the SEC annual, quarterly and current reports with respect to our business and financial condition and must comply with the Nasdaq listing requirements and other applicable securities rules and regulations. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and the Nasdaq to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted and will adopt additional rules and regulations, such as mandatory "say on pay" voting requirements, that will apply to us when we cease to be an emerging growth company. We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time-consuming and costly. To the extent these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will increase our net loss and may require us to reduce costs in other areas of our business.

In the future, we may not be exempt from various reporting requirements that apply to us as an emerging growth company. For example, while the Sarbanes-Oxley Act currently requires us, among other things, to assess the effectiveness of our internal control over financial reporting annually and to assess the effectiveness of our disclosure controls and procedures quarterly, once we cease to be an emerging growth company our independent registered public accounting firm will be required to attest to and report on the effectiveness of our internal control over financial reporting which will require us to incur substantial accounting expenses and expand significant management time on compliance related issues.

We are an emerging growth company and we cannot be certain that the reduced disclosure requirements applicable to emerging growth companies will not make our ADSs less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Start-ups Act of 2012, or the JOBS Act, and have elected to take advantage of the following provisions of the JOBS Act: the exemption from the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act; not providing all of the compensation disclosure that may be required of non-emerging growth public companies under the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act; not disclosing certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the Chief Executive Officer's compensation to employee compensation; not complying with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (auditor discussion and analysis and an extended transition period to comply with new or revised accounting standards applicable to public companies). In addition we have elected to take advantage of (1) reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements; and (2) exemptions from the requirements of holding a non-binding advisory vote on executive compensation including golden parachute compensation. As a result of these elections, our future financial statements may not be comparable to companies that comply with these obligations and our investors may not have access to certain information they may deem important.

Our independent registered public accounting firm will not be required to provide an attestation report on the effectiveness of our internal control over financial reporting as long as we qualify as an "emerging growth company," which may increase the risk that weaknesses or deficiencies in our internal control over financial reporting go undetected and may make it more difficult for investors and securities analysts to evaluate our company. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earliest of (i) December 31, 2020, (ii) the last day of the fiscal year (a) in which we have total annual gross revenue of at least $1.07 billion or (b) in which we are deemed to be a large accelerated filer, which requires the market value of our ordinary shares that are held by non-affiliates to exceed $700.0 million as of the prior June 30th, and (iii) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period. We cannot predict if investors will find our ADSs less attractive because we may rely on these exemptions. If some investors find our ADSs less attractive, there may be a less active trading market for our ADSs, and the price of our ADSs may be more volatile and may decline.

If we fail to establish and maintain proper internal controls, our ability to produce accurate financial statements or comply with applicable regulations could be impaired.

Section 404(a) of the Sarbanes-Oxley Act, requires that management assess and report annually on the effectiveness of our internal controls over financial reporting and identify any material weaknesses in our internal controls over financial reporting. Although Section 404(b) of the Sarbanes-Oxley Act requires our independent registered public accounting firm to issue an annual report that addresses the effectiveness of our internal controls over financial reporting, we have opted to rely on the exemptions provided in the JOBS Act, and consequently will not be required to comply with SEC rules that implement Section 404(b) of the Sarbanes-Oxley Act until such time as we are no longer an emerging growth company.

The presence of material weaknesses could result in financial statement errors which, in turn, could lead to errors in our financial reports, delays in our financial reporting, could require us to restate our operating results or our auditors may be required to issue a qualified audit report. We might not identify one or more material weaknesses in our internal controls in connection with evaluating our compliance with Section 404(a) of the Sarbanes-Oxley Act. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal controls over financial reporting, we will need to expend significant resources and provide significant management oversight. Implementing any appropriate changes to our internal controls may require specific compliance training of our directors and employees, entail substantial costs in order to modify our existing accounting systems, take a significant period of time to complete and divert management's attention from other business concerns. These changes may not, however, be effective in maintaining the adequacy of our internal control.

If either we are unable to conclude that we have effective internal controls over financial reporting or, at the appropriate time, our independent auditors are unwilling or unable to provide us with an unqualified report on the effectiveness of our internal controls over financial reporting as required by Section 404(b) of the Sarbanes-Oxley Act, investors may lose confidence in our operating results, the price of our ADSs could decline and we may be subject to litigation or regulatory enforcement actions. In addition, if we are unable to meet the requirements of Section 404 of the Sarbanes-Oxley Act, we may not be able to remain listed on Nasdaq.

We incur significant increased costs as a result of operating as a company whose ADSs are publicly traded in the United States, and our management is required to devote substantial time to new compliance initiatives.

As a company whose ADSs are publicly traded in the United States since May 6, 2015, we have incurred, and will continue to incur, significant legal, accounting, insurance and other expenses that we did not previously incur as a private company. In addition, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act and related rules implemented by the SEC and Nasdaq have imposed various requirements on public companies including requiring establishment and maintenance of effective disclosure and financial controls. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations have increased, and will continue to increase, our legal and financial compliance costs and will make some activities more time-consuming and costly. Our insurance costs have increased, particularly for directors and officers liability insurance, and we may be required to incur further substantial increased costs to maintain the same or similar coverage or be forced to accept reduced coverage in future. These laws and regulations could also make it more difficult and expensive for us to attract and retain qualified persons to serve on our board of directors, our board committees or as our executive officers. Furthermore, if we are unable to satisfy our obligations as a public company, we could be subject to delisting of the ADSs from Nasdaq, fines, sanctions and other regulatory action and potentially civil litigation.

U.S. investors may have difficulty enforcing civil liabilities against our company, our directors, officers and members of senior management.

We are incorporated under the laws of England and Wales. The rights of holders of our ordinary shares and, therefore, certain of the rights of holders of ADSs, are governed by English law, including the provisions of the Companies Act 2006, and by our articles of association. These rights differ in certain respects from the rights of shareholders in typical U.S. corporations organized in, for example, Delaware. Some of our directors, officers and members of senior management reside outside the United States, and a substantial portion of our assets and all or a substantial portion of the assets of such persons are located outside the United States. As a result, it may be difficult for you to serve legal process on us or our directors and executive officers or have any of them appear in a U.S. court. The United States and the United Kingdom do not currently have a treaty providing for the recognition and enforcement of judgments, other than arbitration awards, in civil and commercial matters. The enforceability in the United Kingdom of any judgment of a U.S. federal or state court will depend on the particular facts of the case as well as the laws and any treaties in effect at the time, including conflicts of laws principles (such as those bearing on the question of whether a U.K. court would recognize the basis on which a U.S. court had purported to exercise jurisdiction over a defendant). In this context, there is doubt as to the enforceability in the United Kingdom, in original actions or in actions for enforcement of judgments of U.S. courts, of civil liabilities based solely on the federal securities laws of the United States. In addition, awards for punitive damages in actions brought in the United States or elsewhere may be unenforceable in the United Kingdom. An award for monetary damages under the U.S. securities laws would likely be considered punitive if it did not seek to compensate the claimant for loss or damage suffered and was intended to punish the defendant.

Provisions in the U.K. City Code on Takeovers and Mergers may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our shareholders.

The U.K. City Code on Takeovers and Mergers, or the Takeover Code, applies to an offer for, among other things, a public company whose registered office is in the United Kingdom (or the Channel Islands or the Isle of Man) and whose securities are not admitted to trading on a regulated market or multilateral trading facility in the United Kingdom (or the Channel Islands or the Isle of Man) if the company is considered by the Panel on Takeovers and Mergers, or the Takeover Panel, to have its place of central management and control in the United Kingdom (or the Channel Islands or the Isle of Man). This is known as the "residency test." The test for central management and control under the Takeover Code is different from that used by the U.K. tax authorities. Under the Takeover Code, the Takeover Panel will determine whether we have our place of central management and control in the United Kingdom by looking at various factors, including the structure of our Board, the functions of the directors and where they are resident.

If at the time of a takeover offer the Takeover Panel considers that we have our place of central management and control in the United Kingdom, we would be subject to a number of rules and restrictions, including but not limited to the following: (1) our ability to enter into deal protection arrangements with a bidder would be extremely limited;(2) we might not, without the approval of our shareholders, be able to perform certain actions that could have the effect of frustrating an offer, such as issuing shares or carrying out acquisitions or disposals; and (3) we would be obliged to provide equality of information to all bona fide competing bidders.

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Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

The following exhibits are either provided with this Quarterly Report on Form 10-Q or are incorporated herein by reference:

Exhibit Number	Description of Exhibit
3.1*	Articles of Association of Adaptimmune Therapeutics plc (incorporated by reference to Exhibit 3.1 to our Form 8-K filed with the SEC on June 16, 2016).
10.1**†	Amendment Agreement No. 5, dated September 7, 2017 between Adaptimmune Limited and GlaxoSmithKline Intellectual Property Development Ltd.
31.1**	Certificate of Chief Executive Officer pursuant to 17 CFR 240.13a-14(a).
31.2**	Certificate of Chief Financial Officer pursuant to 17 CFR 240.13a-14(a).
32.1**	Certificate of Chief Executive Officer pursuant to 17 CFR 240.13a-14(b) and 18 U.S.C.1350.
32.2**	Certificate of Chief Financial Officer pursuant to 17 CFR 240.13a-14(b) and 18 U.S.C.1350.
101.INS**	XBRL Instance Document.
101.SCH**	XBRL Taxonomy Extension Schema Document.
101.CAL**	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF**	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB**	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE**	XBRL Taxonomy Extension Presentation Linkbase Document.

* Previously filed.
** Filed herewith.
† Confidential treatment to be requested as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ADAPTIMMUNE THERAPEUTICS PLC

November 2, 2017

/s/ James Noble
James Noble
Chief Executive Officer

November 2, 2017

/s/ Adrian Rawcliffe
Adrian Rawcliffe
Chief Financial Officer

CONFIDENTIAL — FINAL

CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED AND FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 24B-2 UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED.

AMENDMENT AGREEMENT NO. 5

DATED: 7 September 2017 ("**Amendment Effective Date**")

PARTIES

(1) **ADAPTIMMUNE LIMITED** a company incorporated in the United Kingdom under number 06456741 whose registered office is at 91 Milton Park, Abingdon, Oxon OX14 4RY, United Kingdom ("**Adaptimmune**"); and

(2) **GLAXOSMITHKLINE INTELLECTUAL PROPERTY DEVELOPMENT LTD** whose registered office is at 980 Great West Road, Middlesex, TS8 9GS, United Kingdom (**"GSK"**).

BACKGROUND

(A) GSK and Adaptimmune entered into a Collaboration and Licence Agreement with effective date of May 30, 2014, which was amended by Amendment Agreement No 1 (with Amendment Effective date of 08 May 2015) and Amendment Agreement No. 2 (with Amendment Effective date of 02 February 2016), Amendment Agreement No. 3 (with Amendment Effective date of 29 September 2016) and Amendment Agreement No. 4 dated 11 November 2016 (the "**Collaboration Agreement**").

(B) GSK and Adaptimmune now want to amend the Collaboration Agreement in accordance with Section 16.8 of the Collaboration Agreement, as set out in this fifth Amendment Agreement.

1. DEFINITIONS

1.1 In this Amendment Agreement words and expressions shall have the same meaning as set out in the Collaboration Agreement save as explicitly provided otherwise in this section 1.1 or elsewhere in this Amendment Agreement:

Amendment Agreement	Shall mean this amendment agreement.
Amendment Effective Date	Shall mean the date set out above.

Anticipated Transition Date	Shall mean [***] 2018
IND	Shall mean Investigational New Drug Application number 14603, as filed with the FDA
Initial Option Payment	Shall have the meaning provided in Exhibit B
Initial Target Program Option Exercise Fee	Shall have the meaning provided in Exhibit B
Transition Date	Shall mean the date on which (i) all activities required to be completed by Adaptimmune and GSK in the Transition Plan prior to the Transition Date have been completed, and (ii) the success criteria for each activity, where relevant have been met or have been waived by GSK, and (iii) the IND has been transferred to GSK and GSK has assumed the responsibility for the IND.
Transition Plan	Shall mean the activities set out in Exhibit A to this Amendment Agreement.
Transition Team	Shall mean the team described in Section 15 of Exhibit A as having responsibility for overseeing the performance of the Transition Plan.

1.2 In this Amendment Agreement:

1.2.1 References to sections and clauses are to sections and clauses of this Amendment Agreement unless otherwise provided;

1.2.2 Headings are used for convenience only and do not affect interpretation of the terms;

1.2.3 (a) the word "including" shall be deemed to be followed by the phrase "without limitation" or like expression; (b) the singular shall include the plural and vice versa; and (c) masculine, feminine and neuter pronouns and expressions shall be interchangeable; and

1.2.4 References to a statutory provision include references to the statutory provision as modified or re-enacted or both from time to time and to any

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subordinate legislation made under the statutory provision.

2. EFFECT OF AMENDMENTS

2.1 The amendments set out in section 3 below shall come into effect on the Amendment Effective Date and shall amend the Collaboration Agreement as from the Amendment Effective Date.

2.2 Save as explicitly amended by this Amendment Agreement, the Collaboration Agreement will continue in full force and effect in accordance with the terms set forth therein. In the event of a conflict of terms between this Amendment Agreement and the Collaboration Agreement, the terms of this Amendment Agreement shall

control.

3. OPTION EXERCISE

3.1 GSK hereby exercises the Initial Target Program Option and execution of this Amendment Agreement shall constitute provision of GSK's Option Notice in accordance with Section 6.2 of the Collaboration Agreement.

3.2 Solely with respect to the Initial Target Program, the second sentence of Section 6.2 of the Collaboration Agreement shall be deleted and replaced with the following. For clarity, the following shall not apply to the Second Target Program or other Collaboration Program.

"On receipt of the Initial Target Program Option Exercise Fee Adaptimmune shall grant and hereby grants to GSK the exclusive licence to the Initial Target Program as set out in Section 6.6. of the Collaboration Agreement in accordance with Exhibit 2. For clarity, GSK shall have no right to nominate further Targets other than the Initial Target and the Second Target under Section 5.1.4 of the Collaboration Agreement until full payment of Initial Target Option Exercise Fee as set out Exhibit B of this Amendment Agreement. In addition and as of the Amendment Effective Date, Adaptimmune grants to GSK a non-exclusive license under Adaptimmune's interests in and to the Collaboration Program IP, Joint Background and Adaptimmune Background to the extent necessary for GSK to make, have made, import, use, offer for sale and sell Licensed Products in each case as arising from the Initial Target Program in the Field and in the Territory. Such license shall last until receipt of the Initial Target Program Option Exercise Fee and shall then automatically terminate and be superseded by the exclusive licence granted under Section 6.6 of the Collaboration Agreement". For clarity Section 6.3 shall continue to

apply during the performance of the Transition Plan and Adaptimmune shall not license any Third Party under its rights in the Collaboration Program IP, Adaptimmune Background or Joint Background to manufacture, use sell or supply any Therapy directed to the Initial Target"

4. AMENDMENTS

Transition Plan

4.1 The Initial Development Plan will be superseded in its entirety and as of the Amendment Agreement Effective Date shall be replaced with the Transition Plan set out in Exhibit A to this Amendment Agreement.

4.2 Each Party shall be responsible for conducting the activities assigned to it under the Transition Plan using Commercially Reasonable Efforts and in accordance with Applicable Laws. In performing their respective activities under the Transition Plan, the Parties will use Commercially Reasonable Efforts to minimise the impact on patients enrolled in any of the clinical studies covered by the Transition Plan.

Timing for Performance

4.3 The Parties shall use Commercially Reasonable Efforts to reasonably co-operate in good faith and complete all of the activities set out in the Transition Plan within the timelines set out in such plan.

4.4 The Parties shall keep each other reasonably informed of progress with the Transition Plan and each Party shall notify the other Party of any delay or anticipated delay as soon as such Party becomes aware of such delay or anticipated delay.

Management of Transition Plan

4.5 The Transition Plan shall be managed by the Parties in accordance with paragraph 15 of the Transition Plan. The Transition Team shall act as a Joint Project Team under the Collaboration Agreement for the purpose of overseeing and confirming the successful completion of the required activities under the Transition Plan. The Joint Project Team managing the Transition Plan activities shall report to, and shall be overseen by, the JSC as set forth in Section 4.6 of the Collaboration Agreement.

4.6 The Transition Plan is intended to be an outline of the main areas required for transition of the Initial Target Program to GSK. As soon as reasonably possible following the

Amendment Agreement Effective Date, the Parties shall use Commercially Reasonable Efforts to agree a more detailed plan which sets out in more detail the activities required under the Transition Plan to achieve transition of the Initial Target Program. The detailed activities plan shall form part of and shall be deemed to be incorporated into the Transition Plan.

4.7 Decisions of the JSC shall be made in accordance with Section 4.5 of the Collaboration Agreement save that, in addition, [***].

Other Amendments

4.8 As of the Amendment Agreement Effective Date, Schedule 1 to the Collaboration Agreement shall be amended and replaced with Exhibit A to this Amendment Agreement.

4.9 Section 8.2 of the Collaboration Agreement shall be amended to add the following: "In relation to any fees specified in Schedule 2 which are not subject to [***]".

4.10 The following terms and definitions shall be amended as follows:

4.10.1 For the purposes of the payment terms set forth in Section 8.2 of the Collaboration Agreement, the definition of Milestone Fee for the Initial Target Program shall be amended to read "means each of the amounts set out in Schedule 2 in relation to [***] as specifically set out in Schedule 2 of this Amendment Agreement."

4.11 The following provisions of the Collaboration Agreement shall be deleted:

4.11.1 Section 6.11.3 shall be deleted in its entirety. The Transition Plan specifies all activities required to be performed by Adaptimmune with respect to the Initial Target Program whether before or after the Transition Date. For clarity Section 6.11.2 shall continue to apply. Section 6.11.1 shall also continue to apply but with the following modifications in relation to the Initial Target Program:

(a) The Transition Plan (including the more detailed plan agreed under Section 4.6 of this Amendment Agreement) shall constitute the detailed

technology transfer plan or Development Plan under Section 6.11.1 of the Collaboration Agreement.

(b) References to Schedule 7 in Section 6.11.1 shall be replaced by the

document list set out in Exhibit A1 to this Amendment Agreement together with any relevant activities under the Transition Plan.

(c) The following sentence shall not apply in relation to the Initial Target Program: "The JSC shall also determine the amount of reasonable technical assistance and training initially required from Adaptimmune, at Adaptimmune's expense, to GSK's personnel with respect to Results and the materials set forth in Schedule 7 (if applicable) to enable GSK to comply with its diligence obligations under Section 6.10.1."

4.11.2 Sections 6.1.1.A, 6.1.1.B, 6.2.A, 6.6.A, and 6.6.B (Sarcoma Commercialization Option provisions) shall be deleted in their entirety and shall be of no further force or effect.

4.11.3 Section 6.10.A. shall be amended to apply solely to the ***ADP-0011-008*** *study (the* ***"Multiple Myeloma Combination Study")****.* GSK shall take over any obligations or responsibilities imposed under the Multiple Myeloma Combination Study in relation to which it has agreed to take over in accordance with the Transition Plan. The provisions of Section 3.11 shall continue to apply to the performance of the Multiple Myeloma Combination Study. As of the Amendment Agreement Effective Date, no further or additional combination studies are planned or anticipated with respect to the Initial Target Program.

Safety Data Exchange Agreement

4.12 The Parties will use Commercially Reasonable Efforts to negotiate a safety data exchange agreement after the Amendment Effective Date with the aim of having such agreement effective at least one month prior to Transition Date.

5. GENERAL

5.1 Each Party acknowledges and agrees that the financial provisions set out in Exhibit B constitute the full and complete financial obligations of GSK with respect to the Initial Target Program. Each Party hereby fully, finally and irrevocably releases the other Party from any claims or potential claims, obligation or liabilities arising prior to the Amendment Agreement Effective Date regarding payment of costs or expenses for, or in connection with, the Initial Target Program to the extent in each case that a Party is aware or should reasonably be aware of any claims or potential claims, obligation or liabilities prior to the Amendment Agreement Effective Date.

5.2 This Amendment Agreement is governed by and shall be construed in accordance with English law.

5.3 This Amendment Agreement together with the Collaboration Agreement (incorporating all schedules and exhibits) constitutes the entire agreement between the parties relating to its subject matter. Each party acknowledges that it has not entered into this Amendment Agreement on the basis of any warranty, representation, statement, agreement or undertaking except those expressly set out in this Amendment Agreement or the Collaboration Agreement (as amended). Each party waives any claim for breach of this Amendment Agreement, or any right to rescind this Amendment Agreement in respect of, any representation which is not an express provision of this Amendment Agreement together with the Collaboration Agreement (as amended). Nothing in this clause excludes any liability which either party may have to the other (or any right which either party may have to rescind this Amendment Agreement) in respect of any fraudulent misrepresentation or fraudulent concealment prior to the execution of this Amendment Agreement.

The parties agree to enter into, and be bound by, this Amendment Agreement by their duly authorised representatives as of the Amendment Effective Date.

SIGNED for and on behalf of **ADAPTIMMUNE LIMITED**:

/s/ Helen Tayton-Martin (signature)

CBO (position)

Helen Tayton-Martin (name)

SIGNED for and on behalf of **GLAXOSMITHKLINE INTELLECTUAL PROPERTY DEVELOPMENT LIMITED**:

/s/ Dorcas Murray (signature)

Authorised Signatory For and on behalf of Edinburgh Pharmaceutical Industries Limited
Corporate Director (position)

Dorcas Murray (name)

EXHIBIT A — TRANSITION PLAN

EXHIBIT A — Transition Plan

1. INTRODUCTION

1.1 GSK has exercised the Initial Target Program Option. As a result, the Parties have agreed to transition the Initial Target Program to GSK and to transfer and deliver to GSK all Results arising out of the Initial Target Program in accordance with Section 6.11.1 of the Agreement. This Exhibit sets out the key activities required for transition ("Transition Plan"). The Parties have targeted [***] ("Anticipated Transition Date") for completion of the Transition based on certain limited facts and assumptions known as of the Amendment Effective Date. Although the Parties agree to work diligently and in good faith to complete the Transition by the Anticipated Transition Date, the Parties also acknowledge that the facts and assumptions upon which this Anticipated Transition Date is based may or may not ultimately be correct. Accordingly, the Anticipated Transition Date is a target date for the conclusion of Transition activities, and is not to be deemed to be contractually binding as a definitive date for the conclusion or stopping of all Transition activities. Capitalized terms used but not defined in this Exhibit A shall have the meaning ascribed to such terms in the Agreement. References to a "Section" shall mean the relevant section of this Exhibit A unless otherwise specifically stated herein.

2. TRANSITION PLAN- TIMINGS

2.1 The estimated timings for the Transition Plan are set out in the relevant sections below.

2.2 Both Parties will use their Commercially Reasonable Efforts to comply with the timescales set out in this Exhibit and will notify the other Party of any delays or anticipated delays.

3. TRANSITION PLAN — CLINICAL TRIALS

3.1 STUDY CONDUCT AND MANAGEMENT

3.1.1 ADP-04511 ("Synovial Sarcoma Pilot") — USA and Canada

Adaptimmune will continue to be the sponsor and continue to conduct and manage the Synovial Sarcoma Pilot trial for each cohort as follows and as overseen by the JSC:

- Cohort 1
  - As at the Amendment Effective Date, this cohort has completed

enrolment. Adaptimmune will continue to act as sponsor and to manage open sites and long term follow-up for all patients until Transition Date. [***]

- Cohort 2
  - As at the Amendment Effective Date, this cohort is open and screening is ongoing for the cohort.
  - Adaptimmune will not open or activate any further sites.
  - As of the Amendment Effective Date, Adaptimmune will continue to perform cohort 2 in accordance with existing timescales. [***]
  - Adaptimmune will be responsible for continuing management and conduct of cohort 2 up to Transition Date, including treatment of patients enrolled in the study and any long-term follow-up.
  - GSK will take over management and conduct of cohort 2 on Transition Date. The Parties will work together to ensure transition of patients to GSK is as smooth as possible.
  - Communication with sites will be in accordance with the agreed communication plan set out at Exhibit A4.
- Cohort 3
  - As of Amendment Effective Date, this cohort is no longer actively enrolling.
  - Adaptimmune will be responsible for continuing management and conduct of cohort 3 up to Transition Date.
  - GSK will take over management and conduct of cohort 3 on Transition Date.
  - Communication with sites will be in accordance with the agreed communication plan set out at Exhibit A4.
- Cohort 4
  - As at the Amendment Effective Date, this cohort is open and screening is ongoing for the cohort.

As of the Amendment Effective Date Adaptimmune will continue enrolment and dosing of subjects in this cohort up to dosing of a

maximum of [***] patients. Once the [***] patient has been infused with NY-ESO SPEAR T-cell product, sites will be notified by Adaptimmune that enrolment in cohort 4 has closed.

- Adaptimmune will be responsible for continuing management and conduct of cohort 4 up to Transition Date, including treatment of patients enrolled in the study and any long term follow-up.
- GSK will take over management and conduct of cohort 4 on Transition Date.
- Communication with sites will be in accordance with the agreed communication plan set out at Exhibit A4.

3.1.2 ADP-0011-004 ("NSCLC pilot study") - USA

- The study is actively recruiting as at the Amendment Effective Date.
- Adaptimmune will be responsible for notifying the sites of cessation of the study as follows:
  - No additional sites will be opened or activated and any activation visits will be cancelled,
  - Open sites will be notified as soon as possible after Amendment Effective Date [***] that screening under the screening protocol for NY-ESO will stop in [***] weeks;
  - Following closing of screening, sites will have [***] weeks to enrol patients into the cohort, up to a maximum of 10 patients.
- Adaptimmune will be responsible for continuing management and conduct of study (and associated screening protocol) up to Transition Date, including treatment of patients enrolled in the study and any long term follow-up.
- GSK will take over management and conduct of study on Transition Date.
- Communication with sites will be in accordance with the agreed Communication Plan set out at Exhibit A4.

3.1.3 ADP-0011-007 ("MRCLS pilot study") - USA

- This study is actively recruiting as at Amendment Effective Date.
- Adaptimmune will continue to manage and conduct study up to Transition Date

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including enrolment of up to a maximum of [***] patients. Adaptimmune will use all reasonable efforts to enrol and dose all [***] patients ahead of the Transition Date and will keep GSK informed of patient enrolment.

- GSK will take over management and conduct of study on Transition Date.
- Communication with sites will be in accordance with the agreed communication plan set out at Exhibit A4.

3.1.4 ADP-0011-001 ("Ovarian study") - USA

- This study is actively recruiting as at the Amendment Effective Date.
- Adaptimmune will be responsible for notifying the sites of cessation of the study as follows:
  - No additional sites will be opened or activated and any activation visits will be cancelled,
  - Open sites will be notified as soon as possible after Amendment Effective Date [***] that screening for the study will stop in [***] weeks;
  - Following closing of screening, sites will have [***] weeks to enrol patients into the cohort, up to a maximum of 10 patients.
- GSK will take over management and conduct of study on Transition Date.
- Communication with sites will be in accordance with the agreed Communication Plan set out at Exhibit A4.

3.1.5 ADP-0011-008 ("Multiple Myeloma Combination Study") - USA

- This study is open at the Amendment Effective Date and actively recruiting.
- Adaptimmune will continue to manage and conduct this study up until Transition Date. As part of such management and conduct and unless otherwise agreed by JSC, Adaptimmune will continue to open sites, up to a maximum of [***] sites.
- Adaptimmune will dose all patients enrolled in the study up to the Transition Date.
- GSK will take over management and conduct of study on Transition Date.
- Communication with sites and with Merck will be in accordance with the agreed communication plan set out at Exhibit A4.

3.1.6 ADP-0011-006 ("Synovial Sarcoma Pivotal Study")

- Adaptimmune will cease all further work in relation to the Pivotal Study as of the Amendment Effective Date. Associated regulatory work and communications are covered in Section 4 below.
- Communications in relation to the pivotal study will be made with sites and regulators in accordance with the Communication Plan set out at Exhibit A4.

3.1.7 ADP-01611 and ADP-0011-002 and ADP-01411 (Melanoma and Multiple Myeloma (non-transplant and transplant) pilot trials)

- The studies are closed to enrolment as of the Amendment Effective Date.
- Adaptimmune will continue to manage all close-out activities for these studies up to Transition Date and as further detailed below.

3.1.8 European Clinical Sites

- [***]
- [***]
- Communication with study sites in Europe will be in accordance with agreed Communication Plan set out at Exhibit A4.

3.1.9 LTFU Protocol and Screening Protocol

- Adaptimmune will continue to sponsor, conduct and manage the LTFU study until the Transition Date.
- GSK will take over management and conduct of LTFU study on the Transition Date.
- The Screening study (ADP-0000-0001) will remain with Adaptimmune and will not transition to GSK.

3.1.10 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
Transfer of all clinical study documentation listed in Documentation List in Exhibit A1	[***]	[***]
Transfer of clinical trial knowledge to GSK	[***]	[***]
Transfer of Clinical Safety and Pharmacovigilance knowledge to GSK	[***]	[***]
Transfer of site communications. [***]	[***]	[***]
Transfer of Sponsor responsibility	*- See regulatory section below*	*See regulatory section below*
Transfer of all clinical databases to GSK	*- See biometrics, pharmacovigilance and CDx sections below*	*See biometrics, pharmacovigilance and CDx sections below*
Transfer of Study conduct for each site that participates in an ongoing NYESO study	[***]	[***]
Transfer of ability to manufacture product for patients and to fully support all studies	*- See CMC below*	*See CMC below*
CSR, DSUR and IB completion and transfer	*See relevant sections below*	*See relevant sections below*
Transfer of clinical samples	*See relevant sections below*	*See relevant sections below*
Transfer of relevant vendors' activities	[***]	*See relevant sections below*

3.1.11 General

- [***]
- Notwithstanding the above plans for closure of studies or cessation of enrolment:
  - if an investigator has discussed treatment under any study with a patient prior to the notification of study closure or cessation of enrolment, and that patient subsequently requests inclusion or enrolment then the Parties will use reasonable efforts to include such patient within the study, subject to compliance with Protocol and Applicable Laws.
  - Addition of further patients to any study over and above the agreed total numbers set out above would require JSC agreement, including agreement on allocation of costs.
- Adaptimmune will continue to be responsible for any payments incurred by clinical trial sites or with respect to its vendors and suppliers (eg, CROs, labs, CMOs) in each case as required under an agreement or contract between such third party and Adaptimmune which have accrued prior to Transition Date.

4. TRANSITION PLAN - REGULATORY

4.1 Adaptimmune will continue all regulatory work required to support the clinical studies. (see Section 3 above) including closure activities/ end of trial notifications (as applicable) until Transition Date, subject to Section 6.11.2 of the Agreement.

4.1.1 [***]

4.2 Adaptimmune will provide any information reasonably required by GSK to enable GSK to respond to regulatory authority requests for historic information, where this information has not been transferred to GSK as part of the transition activities. Such provision is not required by Transition Date but in each case will be provided as soon as reasonably practical by Adaptimmune.

4.3 Adaptimmune, as sponsor, will be responsible for responding to any questions or requests from Regulatory Authorities up until Transition Date. Any requests will be provided to GSK and GSK will be given an opportunity to comment on any responses. To the extent any responses require input from GSK in relation to future GSK activities or plans, GSK will provide the information required for Adaptimmune to respond to the relevant Regulatory Agency as soon as reasonably practical.

4.4 Except as otherwise set forth herein or in the Agreement, e.g. Section 6.11.2 of the Agreement, GSK will take responsibility for all regulatory affairs activities on Transition Date.

4.5 Communications with the Regulatory Authorities will be in accordance with the Communication Plan at Exhibit A4, to the extent relevant to any response.

4.6 The Parties will work together to agree all documentation required for transfer of sponsorship for all NY-ESO clinical studies from Adaptimmune to GSK, to enable transfer of sponsorship as of Anticipated Transition Date. In particular, Adaptimmune will transfer [***] specific to the NY-ESO SPEAR T-cell to GSK as of Transition Date.

4.7 Following Transition Date, Section 6.11.2 of the Agreement will continue to apply.

4.8 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
Transfer of all regulatory documentation listed in Documentation List in Exhibit A1	[***]	[***]
Knowledge transfer	[***]	[***]
Transfer of sponsorship for clinical trials to GSK	[***]	[***]

5. TRANSITION PLAN - CSRs

5.1 [***]

5.2 [***]

5.3 [***]

5.4 Technology and know-how transfer

Transfer activity	Success Criteria	Target Dates
[***]	[***]	[***]
Delivery of complete data packages	[***]	[***]
[***]	[***]	[***]

6. TRANSITION PLAN — DSUR ("Data Safety Update Report")

6.1 [***]

6.2 Technology and know-how transfer

Transfer activity	Success Criteria	Target Dates
Writing and filing of DSUR	[***]	[***]

7. TRANSITION PLAN — IB ("Investigator Brochure")

7.1 [***]

7.2 [***]

7.3 Technology and know-how transfer

Transfer activity	Success Criteria	Target Dates
[***]	[***]	[***]
Provision of knowledge transfer to GSK	[***]	[***]

8. TRANSITION PLAN — DATABASE TRANSFER

8.1 Adaptimmune will transfer the clinical trial datasets per the table below to GSK as of the dates stated. [***]

8.2 Adaptimmune will continue to manage clinical trial databases for ongoing studies up until Transition Date (see Section 3).

8.3 [***]

8.4 Technology transfer

Transfer activity	Success Criteria	Target Dates
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]

[***]

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9. TRANSITION PLAN — CDX ACTIVITIES

9.1 [***]

9.2 [***]

9.3 [***]

9.4 [***]

9.5 [***]

9.6 Technology and know-how transfer

Transfer activity	Success Criteria	Target Dates
[***]	[***]	[***]
[***]	[***]	As set out in documentation list

10. TRANSITION PLANS — TRANSFER OF CLINICAL SAMPLES

10.1 Dependent on reconciliation of patient consent for transfer of samples to GSK, Adaptimmune will transfer the following clinical samples to GSK [***];

[***]

10.2 Technology and know-how transfer

Transfer activity	Success Criteria	Target Dates
Provision of list of patient samples capable of transfer to GSK in excel format, together with confirmation of appropriate consents for each sample (to the extent available from site)	[***]	[***]
Provision of samples on above list to GSK's approved third party vendor	[***]	[***]

11. TRANSITION PLANS — PUBLICATION

11.1 Adaptimmune will continue to progress and draft the following publications:

[***]

11.2 Publications will be provided to GSK for prior approval in accordance with the Agreement.

11.3 Adaptimmune will hold a copy of the [***] for the sole purpose of completing the manuscripts and responding to questions relating to such manuscripts.

12. TRANSITION PLANS — CMC

12.1 Supply Chain (General)

12.1.1 Adaptimmune will continue to manage the supply chain and CMO and CROs as required to support clinical programs it is managing under the Transition Plan.

12.1.2 [***]

12.1.3 Provisions relating to specific suppliers [***] are set out in more detail below.

12.1.4 In relation to third party suppliers and save as provided otherwise in this Section 11:

(a) Any equipment Adaptimmune owns or has leased for use at or by third party suppliers will be retained by Adaptimmune.

(b) GSK will need to arrange for its own contracts, and where necessary, equipment, sufficient to enable it to source materials and services for manufacture of NY-ESO T-cells and NY-ESO vector as of Transition Date.

[***]

12.1.5 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
Provision of list and contacts for third party suppliers of quality agreements and audit reports for third party suppliers	[***]	[***]
Provision of documentation relevant to such third party suppliers as set out further in Exhibit A1	- *Delivery of documentation*	As set out in documentation list
[***]	[***]	[***]

12.2 Supply chain — [***]

12.2.1 [***]

12.2.2 [***]

12.2.3 [***]

12.2.4 [***]

12.2.5 [***]

12.2.6 [***]

12.2.7 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
Provision of documentation relevant to [***] as set out further in Exhibit A1	- *Delivery of documentation*	As set out in documentation list in Exhibit A1
[***]	[***]	[***]
Adaptimmune to provide knowledge transfer of [***] to GSK	[***]	[***]
Adaptimmune to provide knowledge transfer of following supporting analytics: [***]	[***]	[***]
Adaptimmune to facilitate training on process from [***] for GSK	[***]	[***]

[***]

12.3 Supply Chain — [***]

12.3.1 [***]

12.3.2 [***]

12.3.3 [***]

12.3.4 [***]

12.3.5 [***]

12.3.6 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
Provision of documentation relevant to [***] as set out further in Exhibit A1	[***]	[***]
[***]	[***]	[***]
Adaptimmune to provide knowledge transfer of [***] process to GSK	[***]	[***]
Adaptimmune to provide knowledge transfer of the following supporting analytics: [***]	[***]	[***]
Adaptimmune to facilitate training on process from [***] for GSK	[***]	[***]

[***]

12.4 Supply Chain — [***]

12.4.1 [***].

12.4.2 [***]

12.4.3 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
Provision of documentation relating to [***] as set out further in Exhibit A1	- *Delivery of documentation*	As set out in documentation list
[***]	[***]	[***]
Knowledge transfer for [***]	- *Covered under Section 11.3 above*	See Section 11.3 above

12.5 Supply Chain — Critical reagents (including [***]***)***

12.5.1 [***]

12.5.2 [***]

12.5.3 [***]

12.5.4 [***]

12.5.5 [***]

12.5.6 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
Provision of documentation as set out further in Exhibit A1	[***]	As set out in documentation list
[***]	[***]	[***]
[***]	[***]	[***]
Adaptimmune to provide knowledge transfer of [***] process to GSK	[***]	[***]
Material transfer	[***]	[***]

12.6 Knowledge Transfer

12.6.1 [***]

12.6.2 [***]

12.6.3 [***]

12.6.4 [***]

12.6.5 [***]

12.6.6 Technology and know-how transfer

Transfer activity	Success Criteria	Timelines
Provision of [***]	[***]	As set out above
Delivery of Technology Transfer documentation	- *Delivery of documentation*	As set out in Exhibit A1.

13. [***]

13.1 [***]

13.2 No further process development or other development work will be conducted by Adaptimmune for GSK in relation to the Initial Target Program.

13.3 Technology and know-how transfer

Transfer activity	Success Criteria	Target Date
[***]	[***]	[***]
[***]	[***]	As set out above

14. COMPLETION OF INITIAL TARGET PROGRAM GENERATION 2

14.1 [***]

15. GENERAL

15.1 Both Parties will work together to facilitate the activities set out in this Transition Plan by the Anticipated Transition Date of [***] 2018. The Parties will work together to agree a more detailed transition plan to facilitate Transition.

15.2 Each Party will appoint a Transition leader to manage and confirm the conduct of the activities under the Transition Plan. The Transition leaders are anticipated to be the parties' respective Alliance Managers, unless otherwise specified during the Transition. The primary role of the Transition leaders will be to ensure that the activities under the transition plan have been successfully completed and to track and confirm the dates upon which each such activity is satisfactorily completed by the applicable Party. The performance of the Transition Plan will be overseen by a transition specific project group which will review the timelines for performance and overall performance of required activities from the Amendment Effective Date until the Transition Date. The project group will be set up within [***] days of Amendment Effective Date. The composition of such project group will depend on the activities under the Transition Plan and will include representatives from all relevant functions within Adaptimmune and GSK.

15.3 The project group shall meet at least [***] to ensure performance of Transition Plan is in accordance with agreed timelines. Smaller groups may also meet where necessary to ensure Transition is as smooth as possible.

EXHIBIT A1 — Documentation List

NY-ESO-1^{c259}T: List of deliverables for the transfer of non-CMC know-how and materials from Adaptimmune (ADPT) to GSK

Deliverables provided below will be provided in accordance with Adaptimmune internal procedures and file formats unless otherwise stated or required (where original format or system is not used by GSK then deliverables will be provided in pdf or word as appropriate). Deliverables will be provided in the form and to the extent they exist within Adaptimmune or can be obtained by Adaptimmune from external providers/vendors at time of transfer, save where required to be created or modified under Transition Plan.

Function	Item/Transition Plan	Comments
REG	[***]	[***]
Clinical	[***]	[***]
DM		
S&P		
CDx	[***]	[***]

Biomarkers, PGx	[***]	[***]
Biology / Non-Clinical Safety	[***]	
Safety/PVG	[***]	[***]

NY-ESO-1^{c259}T: List of deliverables for the transfer of CMC know-how and materials from Adaptimmune (ADPT) to GSK

Function	Item/Transition Plan	Comments
Plasmids and Cell banks	[***]	[***]
Vector	[***]	[***]
Cell process and product	[***]	[***]
Analytical and QC release methods	[***]	[***]
Quality and Supply chain	[***]	
Regulatory (CMC)	[***]	[***]

N.B. In relation to all Deliverables and for clarity, deliverables relevant to NY-ESO and Initial Target Program will be provided. To the extent documents contain information relevant to other Adaptimmune programs and which is not specific to the Initial Target Program or NY-ESO SPEAR T-cell product or its manufacture, such information will be redacted from the documents.

Exhibit A2 — Inventory List

List as of 28 August 2017

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[***]

Exhibit A3 — CMC [***]

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[***]

Exhibit A4 — Communication Plans

Press releases: The Parties will each issue a press release in substantially the form set out below.

GSK Press release:

Issued: [DAY + MONTH] 2017, London UK

GSK exercises option on phase 1/2 NY-ESO T-cell therapy (GSK3377794)

Today GSK announced that it has exercised the option to obtain an exclusive global license from Adaptimmune for an investigational SPEAR T-cell receptor therapy targeting NY-ESO-1 (GSK3377794). Upon exercise of this option and transition of the programme, GSK will assume responsibility for all development, manufacturing and commercialisation activities for the asset.

Adaptimmune will receive up to £48 million from GSK over the course of the transition period. This includes development milestones of up to £18M and the option payment of £30 million, which also allows GSK to nominate two additional targets following completion of the transition. Successful continuation of development and subsequent commercialisation of GSK3377794 would trigger additional payments for development milestones, tiered sales milestones and mid-single to low double digit royalties on worldwide net sales.

Oncology is one of four Therapy Areas of focus for GSK's R&D efforts, where the company believes there are significant opportunities for growth and innovation. GSK has three main areas of Oncology research: Cell and Gene Therapy; Cancer Epigenetics, and Immuno-oncology. There is tremendous potential for cells to be engineered into medicines and GSK is investing broadly to develop platform capabilities in manufacturing cell and gene therapies for use across a broad range of disease areas, including oncology.

Axel Hoos, SVP Oncology R&D, GSK said "The aim of GSK's R&D is to develop medicines with transformational potential for patients. We have seen compelling data for the NY-ESO investigational cell therapy in synovial sarcoma and, following this option exercise, we will capitalise on our in-house Cell and Gene Therapy capabilities to support the development programme for GSK3377794. We will continue to explore the potential for this novel cell therapy in multiple tumour types, and in combination with other cancer therapies."

James Noble, Chief Executive Officer of Adaptimmune, said "This is a very exciting day for Adaptimmune as GSK has exercised its option over our NY-ESO program, earlier than originally planned. The commitment by one of the world's leading pharmaceutical companies to the NY-ESO SPEAR T-cell program as a new treatment modality is a testament to the strength of our data in synovial sarcoma recently presented at ASCO."

GSK3377794 has been granted PRIME designation by the European Medicines agency and Breakthrough Therapy Designation by the US Food and Drug Administration. There are currently six ongoing Phase 1/2 studies of GSK3377794 as monotherapy (NSCLC, Metastatic Melanoma, Ovarian, Multiple Myeloma, Synovial Sarcoma, and Myxoid Round Cell Liposarcoma) and one Phase 1 study in

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combination with pembrolizumab in Multiple Myeloma. As part of the transition process, GSK will be developing a timeline for development activities, including initiation of new clinical studies.

GSK — one of the world's leading research-based pharmaceutical and healthcare companies — is committed to improving the quality of human life by enabling people to do more, feel better and live longer. For further information please visit www.gsk.com.

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Cautionary statement regarding forward-looking statements
GSK cautions investors that any forward-looking statements or projections made by GSK, including those made in this announcement, are subject to risks and uncertainties that may cause actual results to differ materially from those projected. Such factors include, but are not limited to, those described under Item 3.D 'Principal risks and uncertainties' in the company's Annual Report on Form 20-F for 2016.

Registered in England & Wales:
No. 3888792

Registered Office:
980 Great West Road
Brentford, Middlesex
TW8 9GS

Adaptimmune press release.

GSK Exercises Option over SPEAR T-cell Therapy Program Targeting NY-ESO

PHILADELPHIA, Pa. and OXFORD, UK., September 7, 2017 — Adaptimmune Therapeutics plc (Nasdaq:ADAP), a leader in T-cell therapy to treat cancer, today announced that GlaxoSmithKline plc (LSE/NYSE:GSK) has exercised its option under a collaboration and license agreement signed in 2014 to exclusively license the right to research, develop, and commercialize Adaptimmune's NY-ESO SPEAR T-cell therapy program. Further details will be provided in a conference call scheduled for 8:30 AM EDT this morning; dial-in and webcast details are provided below.

Adaptimmune will receive up to £48 million (~$61 million) from GSK over the course of the transition period. This includes development milestones of up to £18 million (~$23 million) and the option payment of £30 million (~$38 million), which also allows GSK to nominate two additional targets following completion of the transition. Successful continuation of development and subsequent commercialization of NY-ESO would trigger additional payments for development milestones, tiered sales milestones, and mid-single to low double-digit royalties on worldwide net sales.

"This is a very exciting day for Adaptimmune as GSK has exercised its option over our NY-ESO program, earlier than originally planned," commented James Noble, Chief Executive Officer at Adaptimmune. "The commitment by one of the world's leading pharmaceutical companies to the NY-ESO SPEAR T-cell program as a new treatment modality is a testament to the strength of our data in synovial sarcoma recently presented at ASCO. From a financial perspective, this option exercise extends our cash runway into 2020. We anticipate the transition of NY-ESO to GSK to be completed over the coming months, after which we will focus our clinical resources on delivery and execution from our wholly-owned assets MAGE-A4, MAGE-A10, and AFP."

Axel Hoos, SVP Oncology R&D, GSK said "The aim of GSK's R&D is to develop medicines with transformational potential for patients. We have seen compelling data for the NY-ESO investigational cell therapy in synovial sarcoma and, following this option exercise, we will capitalize on our in-house Cell and Gene Therapy capabilities to support the development program for GSK3377794. We will continue to explore the potential for this novel cell therapy in multiple tumor types, and in combination with other cancer therapies."

Summary of Recent Data in Synovial Sarcoma

In June of this year, data presented in an oral presentation at ASCO from the ongoing study of NY-ESO SPEAR T-cells in synovial sarcoma continued to indicate a favorable risk benefit profile in this aggressive and difficult-to-treat solid tumor. Initial anti-tumor activity was observed in all ongoing cohorts, including low expressors of NY-ESO. NY-ESO SPEAR T-cells continued to be well-tolerated with all reported events of cytokine release syndrome resolved (the majority of events were Grade 1 or 2), and there were no reported events of seizure, cerebral edema, or

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encephalopathy. Survival data was promising with a median predicted overall survival of 120 weeks (~28 months) among the 12 treated patients in Cohort 1; or, 159 weeks (~37 months) for the ten patients in this cohort who received the target dose of one billion cells. In addition, 6 responses were observed in Cohort 1 patients.

Transition Plan

Adaptimmune and GSK will work together over the coming months to ensure a smooth transition of the NY-ESO SPEAR T-cell development program to GSK. After the transition, GSK will assume sponsor responsibility for all NY-ESO-related activities including ongoing data publications regarding this program Current plans for ongoing and planned clinical studies are summarized below by indication:

Sarcoma:

- Adaptimmune will continue enrollment in the ongoing synovial sarcoma pilot study, which will ultimately transition to GSK.
- GSK will be responsible for continued clinical investigation including initiating the registration study in this indication.
- Adaptimmune will continue to enroll patients in the ongoing myxoid/round cell liposarcoma (MRCLS) study, which will ultimately transition to GSK.

Non-small Cell Lung Cancer (NSCLC):

- Adaptimmune will cease enrollment in the ongoing NSCLC study, whilst GSK develops plans for its own study of NY-ESO SPEAR T-cells in this indication.

Ovarian:

- Adaptimmune will cease enrollment in the ongoing ovarian study, and GSK will assume responsibility for any additional work in this indication.

Multiple Myeloma:

- GSK will take on responsibility for the ongoing multiple myeloma combination study with KEYTRUDA® (pembrolizumab), an anti-PD-1 inhibitor marketed by Merck & Co., Inc., Kenilworth, NJ, USA (known as MSD outside the US and Canada).

About the Collaboration and License Agreement between Adaptimmune and GSK

Adaptimmune and GSK announced their strategic collaboration and license agreement in June 2014 for up to five programs including the first program, NY-ESO. The terms of the agreement were expanded in February 2016 to accelerate development of NY-ESO SPEAR T-cell therapy toward registration trials in synovial sarcoma, to explore development in MRCLS and to enable combination studies.

In January 2017, GSK nominated PRAME as a second target and, as a consequence of this option exercise for NY-ESO, GSK will have the right to nominate its third and fourth targets and Adaptimmune will take these programs through preclinical testing to IND. The agreement excludes targets on which work is already under way, including Adaptimmune's wholly owned MAGE-A10, MAGE-A4, and AFP clinical programs and its active preclinical pipeline.

Adaptimmune's Pipeline

Adaptimmune's proprietary technology enables the Company to consistently generate affinity enhanced T-cell receptors (TCRs) which address intracellular targets on solid tumors that are not accessible to certain other experimental modalities. Adaptimmune has three wholly-owned SPEAR T-cells in active clinical trials, with further first and next generation SPEAR T-cells being developed and evaluated by means of Adaptimmune's proprietary preclinical testing platform.

As stated above, GSK does not have the right to nominate any additional targets on which work is already under way, including Adaptimmune's wholly-owned SPEAR T-cells targeting MAGE-A10, MAGE-A4, and AFP that are being evaluated in four active clinical trials across eight solid tumor indications., These ongoing studies are described in more detail below:

- MAGE-A10: Two active trials, one in NSCLC, and a triple tumor study in urothelial (bladder), melanoma, and head and neck cancer
- MAGE-A4: One active trial across seven solid tumor indications including urothelial, melanoma, head and neck, ovarian, NSCLC, esophageal, and gastric cancers
- AFP: One active study in hepatocellular (liver) cancer

Initial safety and efficacy data across each of these studies is anticipated through 2017 and 2018.

Conference Call Information

The Company will host a live teleconference and webcast to provide additional details at 8:30 a.m. EDT (1:30 p.m. BST) today, September 7, 2017. The live webcast of the conference call will be available via the events page of Adaptimmune's corporate website at www.adaptimmune.com. An archive will be available after the call at the same address. To participate in the live conference call, if preferred, please dial (877) 280-1254 (U.S.) or +44 (0)20 3427 1911 or 0800 279 5004 (U.K.). After placing the call, please ask to be joined into the Adaptimmune conference call and provide the confirmation code (4642775).

About Adaptimmune

Adaptimmune is a clinical-stage biopharmaceutical company focused on the development of novel cancer immunotherapy products. The Company's unique SPEAR (Specific Peptide Enhanced Affinity Receptor) T-cell platform enables the engineering of T-cells to target and destroy cancer, including solid tumors. Adaptimmune has a number of proprietary clinical programs, and is also developing its NY-ESO SPEAR T-cell program under a strategic collaboration and license agreement with GlaxoSmithKline. The Company is located in Philadelphia, USA and Oxfordshire, U.K. For more information, please visit http://www.adaptimmune.com

Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 (PSLRA). These forward-looking statements involve certain risks and uncertainties. Such risks and uncertainties could cause our actual results to differ materially from those indicated by such forward-looking statements, and include, without limitation: the success, cost and timing of our product development activities and clinical trials and our ability to successfully advance our TCR therapeutic candidates through the regulatory and commercialization processes. For a further description of the risks and uncertainties that could cause our actual results to differ materially from those expressed in these forward-looking statements, as well as risks relating to our business in general, we refer you to our Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission (SEC) on August 3,

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2017, and our other SEC filings. The forward-looking statements contained in this press release speak only as of the date the statements were made and we do not undertake any obligation to update such forward-looking statements to reflect subsequent events or circumstances.

Adaptimmune Contacts

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[***]

EXHIBIT B — AMENDED SCHEDULE 2

Milestone Fees

Schedule 2 of the Collaboration Agreement shall be deleted in its entirety and replaced with the following amended Initial Target Program terms. The Second Target Program and Collaboration Program schedule (as set forth below) remain unchanged.

DEVELOPMENT MILESTONES:

Subject to the terms and conditions set forth below in this Schedule 2 and Articles 8 and 9 of the Collaboration Agreement, GSK shall pay each of the non-refundable, non-creditable Milestone Fees to Adaptimmune that are set forth below upon the first occurrence of the corresponding milestone event with respect to any Collaboration Program or particular Licensed Product, as applicable. Each Milestone Fee shall be paid only one time per Collaboration Program regardless of how many Licensed Products or Therapies achieve the corresponding milestone event and no Milestone Fee shall be payable for any milestone event which is not achieved, except as otherwise provided below.

The Milestone Fees shall be payable as follows:

TABLE #1
Milestones for Initial Target Program
Generation 1 and Generation 2

	£M
[***]	
[***]	[***]
[***]	[***]
[***]	
[***]	[***]

Initial Target Program Milestones:

	£M
Exercise of Initial Target Program Option**	30.0 (traunched payment as set forth below**)
[***]	[***]

	£M
[***]	
[***]	[***]
[***]	**[***]**
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

In addition to the milestones set out above:

[***]

· [***]

· Any further planned [***] activities would be set out in the Transition Plan. Further or additional activities, if any, at [***] would be agreed by the JSC. GSK will fund those specific activities that are agreed to continue by the JSC or are set out in the Transition Plan as pass-through costs from [***] for activities and materials in the Transition Plan in accordance with an agreed-upon budget and budget cap. [***]

· [***]

· [***]

**Payment of the milestone on Exercise of Initial Target Program Option shall be made as follows:

[***]

For clarity, GSK shall have no right to nominate any further Targets until the milestone for exercise of Initial Target Program Option is paid in full.

Subsequent Clinical Development Milestones (applicable to both Generation 1 and Generation 2 products)	
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

TABLE #2

Milestones for Second Target Program	**£M**
Nomination of Second Target	1.0
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

	TABLE #3 Milestones for Target Programs and HLA Programs (other than the Initial Target Program and Second Target Program)	**Target Program (£M)**	**HLA Program (£M)**
1	[***]	[***]	[***]
2	[***]	[***]	[***]
3	[***]	[***]	[***]
4	[***]	[***]	[***]
5	[***]	[***]	[***]
6	[***]	[***]	[***]
7	[***]	[***]	[***]
8	[***]	[***]	[***]
9	[***]	[***]	[***]
10	[***]	[***]	[***]
11	[***]	[***]	[***]
12	[***]	[***]	[***]
13	[***]	[***]	[***]
14	[***]	[***]	[***]

1. A Generation 1 Therapy or Generation 1 Licensed Product shall mean the Therapy or Licensed Product described as such in the Initial Development Plan.

2. A Generation 2 Therapy or Generation 2 Licensed Product shall mean the Therapy or Licensed Product described as such in the Initial Development Plan for the Initial Target Program, or in an applicable development plan for any other Collaboration Programs.

3. "IUO assay" means an assay for investigational use only that meets certain clinical and manufacturing standards and which is used in Clinical Trials to gather data for submission as required by the FDA to obtain regulatory approval as an IVD. "IVD" means an IUO assay that has obtained regulatory approval by the FDA for marketing thereof and which is classified as a Class III device.

4. "IDE" means an Investigational Device Exemption application filed with the FDA in accordance with 21 C.F.R. §812.20, or any equivalent filings in a country or regulatory jurisdiction other than the United States.

5. “Collaboration Program start” shall be deemed to have occurred upon agreement of the Development Plan for such Collaboration Program.

6. [***]

7. [***]

8. [***]

9. [***]

10. [***]

---

11. [***]

12. [***]

SALES MILESTONES

Subject to the terms and conditions set forth below in this Schedule 2 and Articles 8 and 9,GSK shall pay to Adaptimmune each of the one-time, non-refundable, non-creditable Sales Milestone Fees on a Licensed Product-by-Licensed Product basis indicated below:

Sales Threshold Milestones:	**£M**
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

Exhibit 31.1

Form of Certification Required by Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934 as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, James Noble, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Adaptimmune Therapeutics plc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected or is reasonably likely to materially affect the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 2, 2017

/s/ James Noble
James Noble
Chief Executive Officer

Exhibit 31.2

Form of Certification Required by Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934 as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Adrian Rawcliffe, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Adaptimmune Therapeutics plc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected or is reasonably likely to materially affect the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 2, 2017

/s/ Adrian Rawcliffe
Adrian Rawcliffe
Chief Financial Officer

Exhibit 32.1

Section 906 Certificate

Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), I, James Noble, Chief Executive Officer of Adaptimmune Therapeutics plc, a public limited company incorporated under English law (the "Company"), hereby certify, to my knowledge, that:

1. The Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2017, to which this Certification is attached as Exhibit 32.1 (the "Quarterly Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 2, 2017

/s/ James Noble
James Noble
Chief Executive Officer

Exhibit 32.2

Section 906 Certificate

Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), I, Adrian Rawcliffe, Chief Financial Officer of Adaptimmune Therapeutics plc, a public limited company incorporated under English law (the "Company"), hereby certify, to my knowledge, that:

1. The Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2017, to which this Certification is attached as Exhibit 32.2 (the "Quarterly Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 2, 2017

/s/ Adrian Rawcliffe
Adrian Rawcliffe
Chief Financial Officer