

Celyad

ASH update

Blasts get blasted but dose needs definition

Data at ASH on 3 December confirmed that CYAD-01 T-cells can destroy acute myeloid leukaemia (AML) blast (cancer) cells. In eight reported AML patients, there was a 62% (5/8) response rate across three dose levels. As preconditioning was not used, this rate is impressive. Safety was excellent with only one dose-limiting toxicity event at a high dose. The good safety profile should now enable faster progress to determine the optimal dose schedule. Further data are promised in H119, probably mid-year. A study combining CYAD-01 with preconditioning is underway and may be crucial. The indicative value is still €1,090m (€89 per share) pending further data.

Year end	Revenue (€m)	PBT* (€m)	EPS* (€)	DPS (€)	P/E (x)	Yield (%)
12/16	8.52	(20.00)	(2.09)	0.0	N/A	N/A
12/17	3.54	(26.80)	(2.79)	0.0	N/A	N/A
12/18e	0.00	(27.25)	(2.43)	0.0	N/A	N/A
12/19e	0.00	(28.50)	(2.38)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Lots of detail but no clear dose response in AML

In the reported open-label THINK study to date, 14 patients were dosed of whom eight were relapsed or refractory (r/r) cases, so small numbers to date. AML is a very aggressive and mutationally varied cancer affecting individuals usually from their late 60s. Three r/r AML patients showed complete remission (38%), but due to prior chemotherapies, none had a full haematological recovery. One, treated at the low dose (3×10^8) in November 2017, proceeded to a stem cell transplant; the best outcome to date. Long-term persistence of CYAD-01 cells is needed for disease control, but one course (three infusions) at a low dose is insufficient to control blasts for more than a few months at best. Multiple CYAD-01 courses are needed. Crucially, the NKG2D receptor used in CYAD-01 is not immunogenic so CYAD-01 can be repeatedly dosed. All patients showed high levels of the NKG2D ligands targeted by CYAD-01, especially the heterogeneous MICA and MICB ligands.

Next AML data by mid-2019

The THINK study will recruit a further cohort to test multiple dosing: six injections over two months; data are promised in H119 (probably mid-year). A further 21-patient study now running is [DEPLETHINK](#); initial data due in H119. This uses preconditioning (Cy-Flu lymphodepletion) to drive *in vivo* CYAD-01 expansion. Early solid cancer data from SITC (Nov 2018) indicates CYAD-01 can expand further after preconditioning. In our view, CYAD-01 still needs higher, consistent CR rates and survival data to progress into further pivotal studies. This probably just needs more patients to be studied at high doses. CYAD-01 safety now seems established.

Valuation: Unchanged at €1,090m pending more data

The overall indicative value remains €1,090m, €89 per share based on a 25% probability of success in AML. The timing, design and costs of pivotal studies are still not determined, and this will affect future value estimates. A multiple dose therapy will be expensive and will need reliable outcomes for strong sales.

Pharma & biotech

7 December 2018

Price €18.66

Market cap €223m

\$1.18/€

Cash (€m) at 30 September 2018 55.9

Shares in issue 11.94m

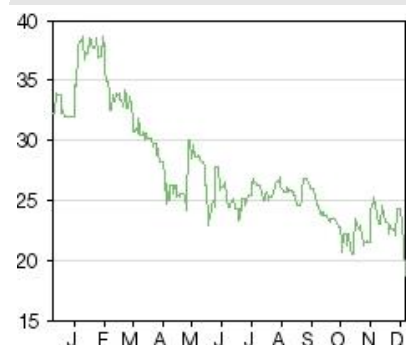
Free float (Edison estimate) 67%

Code CYAD

Primary exchange Euronext Brussels

Secondary exchange NASDAQ

Share price performance



% 1m 3m 12m

Abs (23.5) (24.3) (41.2)

Rel (local) (19.5) (16.8) (29.6)

52-week high/low €38.7 €18.7

Business description

Celyad is developing an innovative natural killer receptor (NKR) CAR T-cell immune-oncology platform. Celyad has a leading position in CAR for AML and solid tumours and is exploring the use of NKR CAR with chemotherapy. It holds a key granted patent in allogeneic CAR technology.

Next events

Further data H1 (mid) 2019

FY18 results Q119

Analysts

Dr John Savin MBA +44 (0)20 3077 5735

Dr Daniel Wilkinson +44 (0)20 3077 5734

healthcare@edisongroup.com
[Edison profile page](#)

**Celyad is a research client of
Edison Investment Research
Limited**

Exhibit 1: Financial summary

	€000s	2016	2017	2018e	2019e
Year end 31 December		IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS					
Revenue		8,523	3,540	0	0
Cost of Sales		(53)	(515)	(500)	(500)
Gross Profit		8,470	3,025	(500)	(500)
EBITDA		(21,246)	(22,317)	(26,500)	(27,750)
Operating Profit (before amort. and except).		(22,006)	(23,283)	(27,500)	(28,750)
Intangible Amortisation		(756)	(748)	(750)	(750)
Other income and charges		0	(26,273)	0	0
Share-based payments		(2,847)	(2,569)	(2,600)	(2,600)
Operating Profit		(25,609)	(52,873)	(30,850)	(32,100)
Net Interest		1,997	(3,521)	250	250
Profit Before Tax (norm)		(20,009)	(26,804)	(27,250)	(28,500)
Profit Before Tax (FRS 3)		(23,612)	(56,394)	(30,600)	(31,850)
Tax		6	1	0	0
Profit After Tax (norm)		(20,003)	(26,803)	(27,250)	(28,500)
Profit After Tax (FRS 3)		(23,606)	(56,393)	(30,600)	(31,850)
Average Number of Shares Outstanding (m)		9.3	9.6	11.2	12.0
EPS - normalised (c)		(209)	(279)	(243)	(238)
EPS - (IFRS) (c)		(253)	(586)	(273)	(267)
Dividend per share (c)		0.0	0.0	0.0	0.0
Gross Margin (%)		N/A	N/A	N/A	N/A
EBITDA Margin (%)		N/A	N/A	N/A	N/A
Operating Margin (before GW and except) (%)		N/A	N/A	N/A	N/A
BALANCE SHEET					
Fixed Assets		53,440	41,232	40,492	39,752
Intangible Assets		49,566	36,508	35,768	35,028
Tangible Assets		3,563	3,290	3,290	3,290
Investments		311	1,434	1,434	1,434
Current Assets		85,366	36,393	50,659	22,149
Stocks		0	0	0	0
Debtors		1,359	233	233	233
Cash (cash plus deposits)		82,587	33,905	48,171	19,661
Other		1,420	2,255	2,255	2,255
Current Liabilities		(11,275)	(7,944)	(7,944)	(7,944)
Creditors		(9,960)	(7,509)	(7,509)	(7,509)
Deferred revenue		0	0	0	0
Walloon loans and bank loan		(1,315)	(435)	(435)	(435)
Long Term Liabilities		(36,646)	(22,146)	(22,146)	(22,146)
Loans (non-current) Bank and Walloon		(7,866)	(1,870)	(1,870)	(1,870)
Other long term liabilities		(28,780)	(20,276)	(20,276)	(20,276)
Net Assets		90,885	47,535	61,061	31,811
CASH FLOW					
Operating Cash Flow		(26,695)	(46,027)	(26,514)	(27,471)
Net Interest		1,997	(3,521)	264	(29)
Tax		0	0	0	0
Capex		(1,782)	(858)	(1,010)	(1,010)
Acquisitions/disposals		(1,561)	0	0	0
Financing		0	625	46,140	0
Dividends		0	0	0	0
Other		3,109	1,099	(4,614)	0
Net Cash Flow		(24,932)	(48,682)	14,266	(28,510)
Opening net debt/(cash)		(96,131)	(73,406)	(31,600)	(45,866)
HP finance leases initiated		0	0	0	0
Loan and finance movements		2,207	6,876	(0)	0
Closing net debt/(cash)		(73,406)	(31,600)	(45,866)	(17,356)

Source: Edison Investment Research estimates, Celyad reports and announcements

General disclaimer and copyright

This report has been commissioned by Celyad and prepared and issued by Edison, in consideration of a fee payable by Celyad. Edison Investment Research standard fees are £49,500 pa for the production and broad dissemination of a detailed note (Outlook) following by regular (typically quarterly) update notes. Fees are paid upfront in cash without recourse. Edison may seek additional fees for the provision of roadshows and related IR services for the client but does not get remunerated for any investment banking services. We never take payment in stock, options or warrants for any of our services.

Accuracy of content: All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable, however we do not guarantee the accuracy or completeness of this report and have not sought for this information to be independently verified. Opinions contained in this report represent those of the Edison analyst at the time of publication. Forward-looking information or statements in this report contain information that is based on assumptions, forecasts of future results, estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of their subject matter to be materially different from current expectations.

Exclusion of Liability: To the fullest extent allowed by law, Edison shall not be liable for any direct, indirect or consequential losses, loss of profits, damages, costs or expenses incurred or suffered by you arising out of or in connection with the access to, use of or reliance on any information contained on this note.

No personalised advice: The information that we provide should not be construed in any manner whatsoever as, personalised advice. Also, the information provided by us should not be construed by any subscriber or prospective subscriber as Edison's solicitation to effect, or attempt to effect, any transaction in a security. The securities described in the report may not be eligible for sale in all jurisdictions or to certain categories of investors.

Investment in securities mentioned: Edison has a restrictive policy relating to personal dealing and conflicts of interest. Edison Group does not conduct any investment business and, accordingly, does not itself hold any positions in the securities mentioned in this report. However, the respective directors, officers, employees and contractors of Edison may have a position in any or related securities mentioned in this report, subject to Edison's policies on personal dealing and conflicts of interest.

Copyright: Copyright 2018 Edison Investment Research Limited (Edison). All rights reserved FTSE International Limited ("FTSE") © FTSE 2018. "FTSE®" is a trade mark of the London Stock Exchange Group companies and is used by FTSE International Limited under license. All rights in the FTSE indices and/or FTSE ratings vest in FTSE and/or its licensors. Neither FTSE nor its licensors accept any liability for any errors or omissions in the FTSE indices and/or FTSE ratings or underlying data. No further distribution of FTSE Data is permitted without FTSE's express written consent.

Australia

Edison Investment Research Pty Ltd (Edison AU) is the Australian subsidiary of Edison. Edison AU is a Corporate Authorised Representative (1252501) of Myonlineadvisers Pty Ltd who holds an Australian Financial Services Licence (Number: 427484). This research is issued in Australia by Edison AU and any access to it, is intended only for "wholesale clients" within the meaning of the Corporations Act 2001 of Australia. Any advice given by Edison AU is general advice only and does not take into account your personal circumstances, needs or objectives. You should, before acting on this advice, consider the appropriateness of the advice, having regard to your objectives, financial situation and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Product Disclosure Statement or like instrument.

New Zealand

The research in this document is intended for New Zealand resident professional financial advisers or brokers (for use in their roles as financial advisers or brokers) and habitual investors who are "wholesale clients" for the purpose of the Financial Advisers Act 2008 (FAA) (as described in sections 5(c) (1)(a), (b) and (c) of the FAA). This is not a solicitation or inducement to buy, sell, subscribe, or underwrite any securities mentioned or in the topic of this document. For the purpose of the FAA, the content of this report is of a general nature, is intended as a source of general information only and is not intended to constitute a recommendation or opinion in relation to acquiring or disposing (including refraining from acquiring or disposing) of securities. The distribution of this document is not a "personalised service" and, to the extent that it contains any financial advice, is intended only as a "class service" provided by Edison within the meaning of the FAA (i.e. without taking into account the particular financial situation or goals of any person). As such, it should not be relied upon in making an investment decision.

United Kingdom

Neither this document and associated email (together, the "Communication") constitutes or form part of any offer for sale or subscription of, or solicitation of any offer to buy or subscribe for, any securities, nor shall it or any part of it form the basis of, or be relied on in connection with, any contract or commitment whatsoever. Any decision to purchase shares in the Company in the proposed placing should be made solely on the basis of the information to be contained in the admission document to be published in connection therewith.

This Communication is being distributed in the United Kingdom and is directed only at (i) persons having professional experience in matters relating to investments, i.e. investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "FPO") (ii) high net-worth companies, unincorporated associations or other bodies within the meaning of Article 49 of the FPO and (iii) persons to whom it is otherwise lawful to distribute it. The investment or investment activity to which this document relates is available only to such persons. It is not intended that this document be distributed or passed on, directly or indirectly, to any other class of persons and in any event and under no circumstances should persons of any other description rely on or act upon the contents of this document (nor will such persons be able to purchase shares in the placing).

This Communication is being supplied to you solely for your information and may not be reproduced by, further distributed to or published in whole or in part by, any other person.

United States

The Investment Research is a publication distributed in the United States by Edison Investment Research, Inc. Edison Investment Research, Inc. is registered as an investment adviser with the Securities and Exchange Commission. Edison relies upon the "publishers' exclusion" from the definition of investment adviser under Section 202(a) (11) of the Investment Advisers Act of 1940 and corresponding state securities laws. This report is a bona fide publication of general and regular circulation offering impersonal investment-related advice, not tailored to a specific investment portfolio or the needs of current and/or prospective subscribers. As such, Edison does not offer or provide personal advice and the research provided is for informational purposes only. No mention of a particular security in this report constitutes a recommendation to buy, sell or hold that or any security, or that any particular security, portfolio of securities, transaction or investment strategy is suitable for any specific person.

Frankfurt +49 (0)69 78 8076 960
Schumannstrasse 34b
60325 Frankfurt
Germany

London +44 (0)20 3077 5700
280 High Holborn
London, WC1V 7EE
United Kingdom

New York +1 646 653 7026
295 Madison Avenue, 18th Floor
10017, New York
US

Sydney +61 (0)2 8249 8342
Level 12, Office 1205
95 Pitt Street, Sydney
NSW 2000, Australia