

# BiondVax Pharmaceuticals

New funds to support M-001's Phase III initiation

The €20m loan agreement with the European Investment Bank (EIB) is a game changing event for BiondVax, we believe. The agreement was signed on 19 June 2017 and over the next three years the company will be able to drawdown all the money presuming the development milestones related to the lead universal flu vaccine candidate M-001 are met. BiondVax now aims to initiate Phase III activities and also invest in a new manufacturing facility securing the supply of M-001 for the remaining development and commercial launch. We have revised our model to reflect the changes and value BiondVax at \$111m (NIS398m), up from \$77m (NIS278m).

Year end	Revenue (NISm)	PBT* (NISm)	EPS* (NIS)	DPS (NIS)	P/E (x)	Yield (%)
12/15	0.0	(10.2)	(0.10)	0.0	N/A	N/A
12/16	0.0	(9.2)	(0.07)	0.0	N/A	N/A
12/17e	0.0	(15.2)	(0.10)	0.0	N/A	N/A
12/18e	0.0	(20.1)	(0.12)	0.0	N/A	N/A

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

## External validation of BiondVax technology

BiondVax now plans to go ahead with the Phase III trial and will likely still seek to land a partnering deal while in Phase III. We view such a strategy favourably, as this could potentially create more value in the form of retaining a higher portion of the value of M-001 when negotiating with the partner. In addition to the fact that the funding provides financial visibility for the medium term, we also take it as an external validation of BiondVax's technology.

## Ramping up production expertise

In a separate development, BiondVax announced in March 2017 its plans to build a production facility, which will be partly financed by a government grant. BiondVax decided to invest in the production of its vaccine rather than just out-source, which will give it more control of the supply and create tangible asset. The expected capacity is up to tens of millions of doses per year, which should cover the requirement for Phase III trials and likely for commercial launch. The company has already started preparing plans, but specific timelines have not been announced.

## Valuation: Increased to \$111m (NIS398m)

Our valuation of BiondVax is increased to \$111m (NIS398m) or \$26.4/ADR (NIS2.4/share), from \$77m (NIS278m) or \$18.2/ADR (NIS1.7/share), including cash of \$9.6m (NIS34m) at end-Q117. We maintain our scenario that BiondVax will initiate Phase III trials next year in the pandemic primer indication and then will seek to expand into a seasonal primer for populations at risk. However, BiondVax remains open-minded about which indication it will target first. To reflect the fact that the company now has substantial funding to invest in late-stage development, we have changed the nature of the partnership deal in our model from simple out-licensing to a co-development partnership and increased BiondVax's share of the rNPV, which was the main driver behind the increase in our valuation.

## Company update

Pharma & biotech

17 July 2017

Price\*
Market cap

NIS0.69 NIS117m

\*Priced as at 12 July 2017.

NIS3.57/US\$ NIS3.99/€

Net cash at end-Q117

\$9.6m (NIS34m)

Shares in issue

168.9m

Free float

Code

75% BVXV

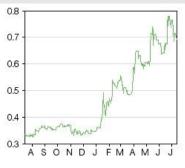
Primary exchange

TASE

Secondary exchange

NASDAQ

### Share price performance



%	1m	3m	12m
Abs	8.1	11.4	108.4
Rel (local)	6.3	7.7	101.3
52-week high/low		NIS0.8	NIS0.3

#### **Business description**

BiondVax Pharmaceuticals is developing a potentially universal influenza vaccine and the lead candidate M-001 could be positioned as a primer for seasonal or pandemic vaccines or as a standalone influenza vaccine. So far M-001 has been tested in two Phase I/II and three Phase II trials and consistently demonstrated immunogenicity to multiple virus strains.

#### **Next events**

Results from Phase IIb with UNISEC in Europe

Q317

Start of enrolment in Phase II with NIH in the US

2017

#### **Analysts**

Jonas Peciulis +44 (0)20 3077 5728 Juan Pedro Serrate +44 (0)20 3681 2534

healthcare@edisongroup.com

Edison profile page



## Loan enables advancement into Phase III with M-001

The EIB loan is interest-free; remuneration will vary depending on royalties from net sales of BiondVax M-001 once approved. BiondVax retains an option to repay the loan and repurchase the royalties at any time. The company can drawdown in three tranches within 12, 24 and 36 months, which will also depend on certain agreed milestones, eg manufacturing of first clinical batch for the Phase III clinical trials. The tranches are repayable five years after each drawdown. The funds from EIB cannot exceed 50% of the total financing requirement for the M-001 development and related activities. So, BiondVax will need to match the funding from EIB in each tranche, although this can come from a variety of sources and will not necessarily be dilutive to BiondVax equity holders; for example, it could be upfront and milestone payments from a potential partnership deal.

The new funds are available via Horizon 2020, the EU Research and Innovation Framework Programme for 2014-20, managed by the European Commission and the European Investment Bank Group. Over this period, the initiative will make available more than €24bn to support research and innovation products being developed by various sized companies investing in R&D. We believe that before the loan was agreed, BiondVax underwent a substantial due diligence process to demonstrate the potential of its universal flu vaccine's potential. We therefore take it as an external validation of BiondVax technology, which could also raise the company's profile when approaching potential partners.

Recently, BiondVax also provided an update about the ongoing Phase IIb trial with M-001, which is due to report final results. This was expected to happen before end-Q217, but the company mentioned that the announcement will be postponed somewhat, although it should come in shortly. The delay was a result of the number of parties involved in the European UNISEC Consortium, which is running and funding the trial.

### **Valuation**

Our valuation of BiondVax is increased to \$111m (NIS398m) or \$26.4/ADR (NIS2.35/share), from \$77m (NIS278m) or \$18.2/ADR (NIS1.7/share). If we include c 111m outstanding options and warrants, the relative valuation on a fully diluted basis would be \$15.9/ADR (NIS1.42/share). We value BiondVax based on a risk-adjusted NPV analysis using a 12.5% discount rate and including cash of \$9.6m (NIS34m) at end-Q117. Exhibit 2 provides assumptions and our valuation of M-001 in each indication separately.

BiondVax indicated that it will start preparations for Phase III, which is still expected to be initiated next year. As previously, the company is open-minded as to which indication to choose for the upcoming trial and what would be the best trial design. Due to the novelty of BiondVax's vaccine technology, existing industry experience in vaccine development is not directly transferable to design late-stage trials with M-001. In our <u>initiation report</u> we assumed one scenario in which BiondVax would go for pandemic primer indication and then would expand into seasonal primer for populations at risk. M-001 as a standalone universal influenza vaccine is the ultimate goal for the company; however, it is the most R&D-intensive route as well, so for the time being we do not include it in our valuation.

We also assumed that BiondVax would land a partnership deal ahead of the Phase III studies and would not invest in these clinical trials. To reflect the fact that BiondVax can now invest a substantial amount of additional money in M-001, we have changed the nature of the potential partnership deal from simple out-licensing to joint development with a partner that co-funds the late-stage studies. BiondVax's recently announced plan to build manufacturing facility was budgeted at c €5m



(NIS20m), of which 20% (€1m) will be funded by a government grant. We therefore assume that €16m of the EIB loan will go into M-001 development, while our assumption of the R&D cost needed for the whole Phase III in the epidemic primer indication is \$50m.

We now assume that both BiondVax and the partner will contribute the funds, which implies a likely higher rNPV share for BiondVax than our original assumption of 25%, as detailed in our initiation report. We have increased BiondVax's share to 35% for both indications, which was the main driver of the increase in our valuation. We keep other R&D assumptions unchanged as in our <u>initiation report</u>, including the scenario that after the market launch the partner would be running the commercialisation.

Product	Launch	Peak sales (\$m)	Full rNPV (\$m)	Technology probability	Licensing deal probability	BiondVax's rNPV (\$m)	rNPV/ ADR (\$)	rNPV/share (NIS)	Comments	
M-001 as pandemic vaccine primer	2023	670	169.2	60%	30%	61.1	14.48	1.29	Full rNPV reflects the valuation as if BiondVax develops and	
M-001 as seasonal vaccine primer	2027	1,380	122.9	60%	30%	40.6	9.61	0.86	markets M-001 by itself assuming all associated costs. The licensing deal was	
Net cash (\$)			9.6	100%		9.6	2.27	0.20	modelled on the basis of full rNPV split at 35%	
Valuation (\$)			301.7			111.3	26.36		: (BiondVax):65% (partner). See	
Valuation (NIS)			1,077.5			397.5		2.35	our initiation report.	

Source: Edison Investment Research. Note: WACC = 12.5% for product valuations.

## **Financials**

BiondVax is debt-free and reported end-Q117 cash and cash equivalents (cash, cash equivalents and short- and long-term marketable securities) of \$9.6m (NIS34m). The company booked operating expenses of \$817k (NIS3.0m) in Q117, while R&D expenditures were \$516k (NIS1.87m), broadly in line with our expectations. So far, BiondVax has been running its operations in a cost-effective way because its partners UNISEC in Europe and NIH in the US are funding the majority of the costs associated with the Phase II studies.

In our financial forecasts we now reflect the new loan, plans to go ahead with the manufacturing facility and the initiation of the first trial. We assume that BiondVax will drawdown €6m in each of 2017 and 2018 (according to the agreement, the first two drawdowns are between €4-6m), while the last drawdown will include the rest. As mentioned before, we assume €16m will be spent on R&D, while €4m will be invested in the construction of the manufacturing plant. Although no timelines were provided, BiondVax appears to have a firm intention to proceed with the works. Therefore we add capex of €0.5m, €2.25m and €2.25m in 2017, 2018 and 2019, respectively, and a grant of €1m in the P&L in 2018.



	NIS000s	2013	2014	2015	2016	2017e	2018
Year end 31 December		IFRS	IFRS	IFRS	IFRS	IFRS	IFR
PROFIT & LOSS							
Revenue		0	0	0	0	0	
Cost of Sales		0	0	0	0	0	
Gross Profit		0	0	0	0	0	
Research and development		(5,451)	(5,492)	(7,906)	(7,794)	(10,714)	(18,750
EBITDA		(6,932)	(7,465)	(10,675)	(11,279)	(14,721)	(18,964
Operating Profit (before amort. and except.)		(7,627)	(8,142)	(11,303)	(11,900)	(15,436)	(20,190
Intangible Amortisation		(14)	0	0	0	0	
Exceptionals		0	0	0	0	0	
Other		0	0	0	0	0	(22.122
Operating Profit		(7,641)	(8,142)	(11,303)	(11,900)	(15,436)	(20,190
Net Interest		(395)	378	1,104	2,716	265	14
Profit Before Tax (norm)		(8,022)	(7,764)	(10,199)	(9,184)	(15,171)	(20,050
Profit Before Tax (reported)		(8,036)	(7,764)	(10,199)	(9,184)	(15,171)	(20,050
Tax		0	0	0	0	0	
Profit After Tax (norm)		(8,022)	(7,764)	(10,199)	(9,184)	(15,171)	(20,050
Profit After Tax (reported)		(8,036)	(7,764)	(10,199)	(9,184)	(15,171)	(20,050
Average Number of Shares Outstanding (m)		47.9	54.3	105.5	135.1	152.0	168.
EPS - normalised (NIS)		(0.17)	(0.14)	(0.10)	(0.07)	(0.10)	(0.12
EPS - normalised and fully diluted (NIS)		(0.17)	(0.14)	(0.10)	(0.07)	(0.10)	(0.12
EPS - (reported) (NIS)		(0.17)	(0.14)	(0.10)	(0.07)	(0.10)	(0.12
Dividend per share (NIS)		0.0	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)		N/A	N/A	N/A	N/A	N/A	N/A
EBITDA Margin (%)		N/A	N/A	N/A	N/A	N/A	N/A
Operating Margin (before GW and except.) (%)		N/A	N/A	N/A	N/A	N/A	N/A
		IV/A	IN/A	IN/A	IN/A	IV/A	11//
BALANCE SHEET							
Fixed Assets		5,458	5,753	4,379	3,971	5,252	10,956
Intangible Assets		0	0	0	0	0	(10.17
Tangible Assets		3,285	2,638	2,044	1,443	2,724	10,478
Investments		2,173	3,115	2,335	2,528	2,528	478
Current Assets		20,365	12,709	36,928	26,139	46,729	46,894
Stocks		0	0	0	0	0	(
Debtors		489	1,081	1,442	815	1,262	1,262
Cash		17,863	9,612	33,470	15,705	35,849	45,633
Other		2,013	2,016	2,016	9,619	9,619	(2.224
Current Liabilities		(1,782)	(1,813)	(1,699)	(1,375)	(2,316)	(3,034
Creditors		(1,782)	(1,813)	(1,699)	(1,375)	(2,316)	(3,034
Short term borrowings		0	0	0	0	0	(47.050
Long Term Liabilities		(55)	(62)	(69)	(76)	(24,016)	(47,956
Long term borrowings		0	0	0	0 (70)	(23,940)	(47,880
Other long term liabilities		(55)	(62)	(69)	(76)	(76)	(76
Net Assets		23,986	16,587	39,539	28,659	25,649	6,859
CASH FLOW							
Operating Cash Flow		(4,338)	(7,624)	(10,262)	(9,688)	(12,965)	(16,985
Net Interest		133	52	(5)	35	265	14
Tax		0	0	0	0	0	
Capex		(196)	(30)	(34)	0	(1,996)	(8,980
Acquisitions/disposals		0	0	0	0	0	
Financing		9,248	(782)	33,753	0	10,900	
Other		1,987	133	406	(8,112)	0	11,66
Dividends		0	0	0	0	0	
Net Cash Flow		6,834	(8,251)	23,858	(17,765)	(3,796)	(14,156
Opening net debt/(cash)		(11,029)	(17,863)	(9,612)	(33,470)	(15,705)	(11,909
HP finance leases initiated		Ó	Ó	Ó	Ó	Ó	, ,
Other		0	0	0	0	0	
Closing net debt/(cash)		(17,863)	(9,612)	(33,470)	(15,705)	(11,909)	2,24



Edison is an investment research and advisory company, with offices in North America, Europe, the Middle East and AsiaPac. The heart of Edison is our world-renowned equity research platform and deep multi-sector expertise. At Edison Investment Research, our research is widely read by international investors, advisers and stakeholders. Edison Advisors leverages our core research platform to provide differentiated services including investor relations and strategic consulting. Edison is authorised and regulated by the Financial Conduct Authority. Edison Investment Research (NZ) Limited (Edison NZ) is the New Zealand subsidiary of Edison. Edison NZ is registered on the New Zealand Financial Service Providers Register (FSP number 247505) and is registered to provide wholes ale and/or generic financial adviser services only. Edison Investment Research Inc (Edison US) is the US subsidiary of Edison and is regulated by the Securities and Exchange Commission. Edison Investment Research Limited (Edison Aus) [46085869] is the Australian subsidiary of Edison and is not regulated by the Securities and Investment Commission. Edison Investment Research Limited [4794244]. www.edisongroup.com

#### EDISON ISRAEL DISCLAIMER

Disclosure regarding the scheme to enhance the awareness of investors to public companies in the technology and biomed sectors that are listed on the Tel Aviv Stock Exchange and participate in the scheme (hereinafter respectively "the Scheme", "TASE", "Participant" and/or "Participants"). Edison Investment Research Ltd (hereinafter respectively "Edison Investment Research Ltd (hereinafter respectively "Edison Investment Research Ltd (hereinafter "the Cardener"), regarding the Participants and according to the Scheme (hereinafter "the Analysis" or "Analyses"). The Analysis will be distributed and published on the TASE website (Maya), Israel Security Authority (hereinafter "the ISA") website (Magna), and through various other distribution channels. The Analysis for each participant will be published at least four times a year, after publication of quarterly or annual financial reports, and shall be updated as necessary after publication of an immediate report with respect to the occurrence of a material event regarding a Participant. As set forth in the Agreement, Edison Israel is entitled to fees for providing its investment research services. The fees shall be paid by the Participants directly to the TASE, and TASE shall pay the fees directly to Edison. Subject to the terms and principals of the Agreement, the Annual fees that Edison Israel shall be entitled to fer each Participant shall be in the range of \$35,000-50,000. As set forth in the Agreement and subject to its terms, the Analyses shall include a description of the Participant and its business activities, which shall inter aliar relate to matters such as: shareholders; management; products; relevant intellectual property; the business environment in which the Participant operates; the Participant operates and according to

#### EDISON INVESTMENT RESEARCH DISCLAIMER

Copyright 2017 Edison Investment Research Limited. All rights reserved. This report has been prepared and issued by Edison for publication globally. 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. Opinions contained in this report represent those of the research department of Edison at the time of publication. The securities described in the Investment Research may not be eligible for sale in all jurisdictions or to certain categories of investors. This research is issued in Australia by Edison Aus and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act. The Investment Research is distributed in the United States by Edison US to major US institutional investors only. Edison US is registered as an investment adviser with the Securities and Exchange Commission. Edison US 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. As such, Edison does not offer or provide personalised advice. We publish information about companies in which we believe our readers may be interested and this information reflects our sincere opinions. The information that we provide or that is derived from our website is not intended to be, and should not be construed in any manner whatsoever as, personalised advice. Also, our website and 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 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. This document is provided for information purposes only and should not be construed as an offer or solicitation for investment in any securities mentioned or in the topic of this document. A marketing communication under FCA Rules, this document has not been prepared in accordance with the legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research. Edison has a restrictive policy relating to personal dealing. 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. Edison or its affiliates may perform services or solicit business from any of the companies mentioned in this report. The value of securities mentioned in this report can fall as well as rise and are subject to large and sudden swings. In addition it may be difficult or not possible to buy, sell or obtain accurate information about the value of securities mentioned in this report. Past performance is not necessarily a guide to future performance. 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. 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 (ie 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. To the maximum extent permitted by law, Edison, its affiliates and contractors, and their respective directors, officers and employees will not be liable for any loss or damage arising as a result of reliance being placed on any of the information contained in this report and do not guarantee the returns on investments in the products discussed in this publication. FTSE International Limited ("FTSE") © FTSE 2017. "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.