Assembly Biosciences (NASDAQ:ASMB)

July 31, 2020

FEATURED CATALYST SUMMARY

Hepatitis B (HBV) afflicts nearly 292 million people around the world. Unlike Gilead Sciences' (NASDAQ:GILD) Harvoni in hepatitis C, no comprehensive cure has been developed for HBV.

Assembly Biosciences' ABI-H0731 appeared as if it would deliver on such promise in April 2019, but Assembly fell short in two small trials. The company regrouped and presented new combination therapy data using ABI-H0731. It also advanced another "core inhibitor" drug, ABI-H2158, to treat HBV. *SanaCurrents* **assigns a pivotal sentiment** Assembly will report positive, peer-reviewed data from ABI-H0731 and ABI-H2158 trials at an August liver disease conference in Europe.

Standard HBV therapy now involves antiviral medications such as entecavir, originally approved in 2005. These drugs help fight off viral replication, protect the liver, and hopefully forestall a liver transplant. Assembly tested ABI-H0731 by adding the drug to entecavir and other nucleoside reverse transcriptase inhibitors (NRTIs). In trial results released in April 2019, ABI-H0731 proved effective at suppressing HBV but not necessarily eliminating the presence of the virus.

Assembly then launched study 211, a 64-patient phase IIa, open-label trial designed to test if ABI-H0731 could inhibit the generation of new covalently closed circular DNA (cccDNA). Data from earlier studies indicated inhibiting new cccDNA generation would lead to a decline in the key viral antigens HBsAg and HBeAg, representing a new endpoint for ABI-H0731. The company's approach also expected levels of existing cccDNA would decrease.

The interim results in study 211 proved to be a success in November 2019. In May 2020, Assembly said by week 24 the viral loads reflected by the presence of the antigens HBsAg and HBeAg **were completely undetected in 81% of patients** in the combination therapy arm**,** compared to 0% in NRTI-only treated patients. Assembly will present further data on study 211 in August.

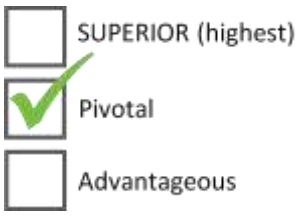
In June 2020, Assembly launched an 80-subject, proof-of-concept phase II trial evaluating ABI-H2158 in combination with entecavir, in treatment-naïve, HBeAg-positive patients with chronic HBV infection without cirrhosis. As with ABI-H0731, Assembly will release updated data on the 9-subject, phase Ib trial of its second-generation core inhibitor ABI-H2158 in August.

THE EDGE

On July 20, Assembly entered an agreement with BeiGene (NASDAQ: BGNE; HKEX: 06160) that granted BeiGene exclusive rights to develop and commercialize ABI-H0731, ABI-H2158 and ABI-H3733 in China, including Hong Kong, Macau, and Taiwan. ABI-H3733 is another second-generation core inhibitor that is in phase I clinical trials.

Though the deal is small, only $40 million upfront, the BeiGene agreement puts Assembly's drugs on a rapid path to commercialization and

PROBABILITY SENTIMENT



Key Catalyst(s)

- Clinical data for ABI-H0731 and ABI-H2158

Key Catalyst Date(s)

- August 27-29, 2020

Insider & Institutional Holdings

7.35% % of Shrs Held by All Insiders

89.86% % of Shares Held by Inst.

96.99% % of Float Held by Institutions

160 # of Inst. Holding Shares

Key Executives

Dr. John G. McHutchison A.O., M.D., FRACP, CEO, Pres & Director

Mr. Thomas Joseph Russo C.F.A., CFA, CFO/Principal Accounting Officer

Dr. Luisa M. Stamm M.D., Ph.D., Chief Medical Officer

Dr. Uri A. Lopatin, Co-Founder and Clinical & Scientific Advisor

Dr. Adam Zlotnick, Co-Founder, Chief Scientific Advisor

Location

331 Oyster Point Boulevard
Fourth Floor
South San Francisco, CA 94080
(833) 509 4583
http://www.assemblybio.com

General Guidelines for Probability Sentiments

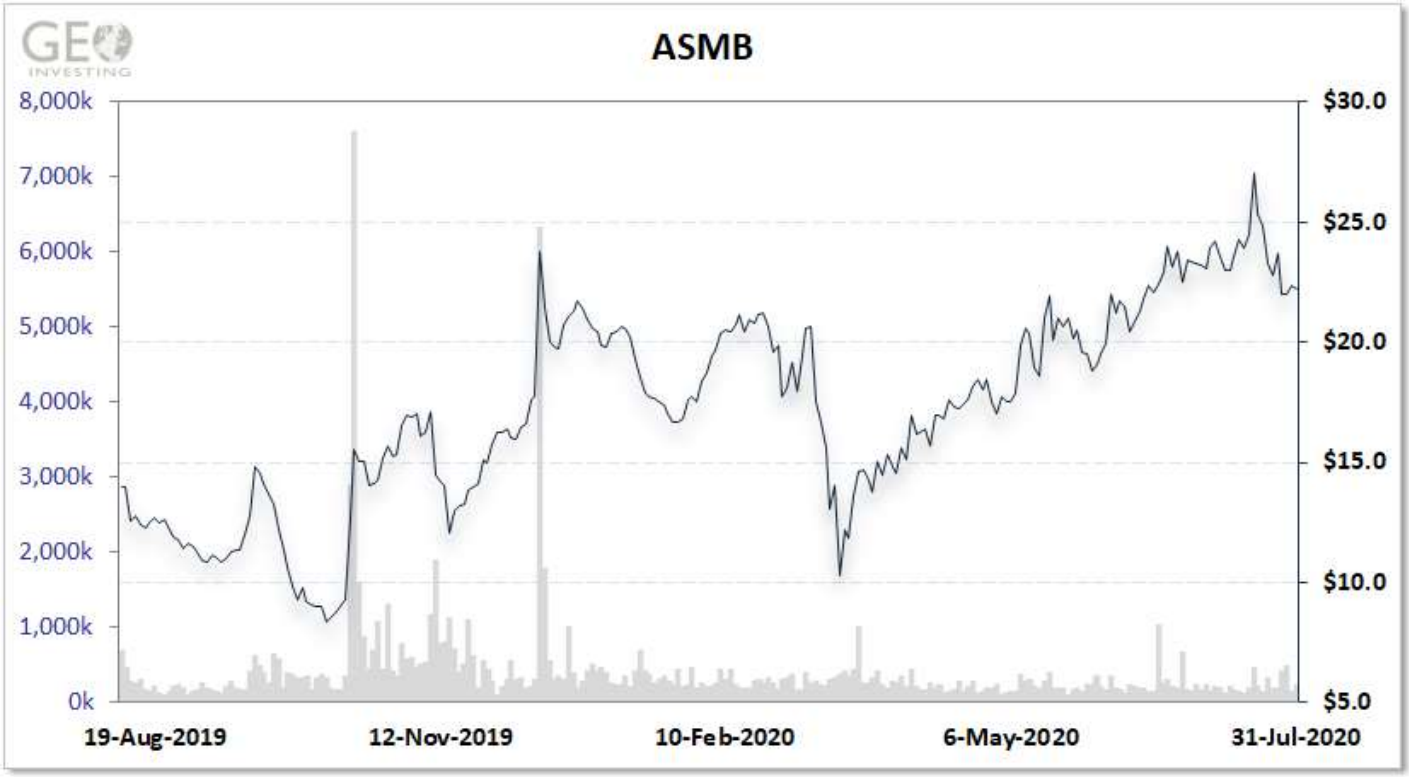
Based on SanaCurrents' analytical model, Superior and Pivotal sentiments reflect a probability score of at least 60% that the company will announce a positive result to the specified catalyst. In our experience, a positive result typically increases the company's share price. An Advantageous sentiment reflects a score of less than 60%.

THE EDGE cont'd

strengthens the company's filings in Europe and the US. The global market for HBV treatment is forecast to reach $3.3 billion by 2024. In China, the prevalence of HBV is particularly high.

In the US, Assembly reached an agreement with the FDA this year to determine when patients in study 211 will be transitioned off combination therapy. Approximately two-thirds of the virally suppressed cohort in study 211 reached ultra-low, nearly undetectable biomarker levels to meet therapy stopping criteria, according to the company. In addition, approximately 80% of the treatment-naïve cohort is expected to continue treatment because their biomarkers have continued to decline.

Should the success of study 211 continue in next year as patients transition off the combination therapy, Assembly will be able to monitor patients for potential sustained virologic response. This would put Assembly in a position to assert the combination therapy should become the standard of care for HBV by first half of 2021. Quite an accomplishment for a company with a market cap of approximately $775 million.



Assembly Biosciences (NASDAQ:ASMB)

Tear Sheet

ASSEMBLY BIOSCIENCES, INC. USD 22.20 -0.18 -0.80%

Country	United States of America	Next FQ/FH End Date	Jun 30, 2020
Exchange	NASDAQ Stock Market	Next FY End Date	Dec 31, 2020
GICS Sector	Health Care	Next earnings Date	Aug 07, 2020
GICS Industry	Biotechnology	Latest earnings Date	May 07, 2020
Currency	USD		

General Information *in millions USD, except per share data

Price (Previous Close)	22.20	Div. Yield, Last year (FY0)	
Price - 52 Week High	27.64	Shares Outstanding	32.6 MM
Price - Current vs 52wk High	-20.26%	Short Interest Shares	3.9 MM
Price - 52 Week Low	8.13	SI % of O/S	11.92%
Price - Current vs 52wk Low	173.06%	Market Capitalization	726
Beta - Sampling last 1y, Daily	1.27 vs. S&P 500	Net Debt	-274
		Enterprise Value	477

Estimates revision momentum *in millions USD, except EPS

	Last reported FY	Current Year FY1			Next Year FY2		
		6mth ago	3mth ago	Today	6mth ago	3mth ago	Today
Consensus date		2/2/2020	5/2/2020	8/2/2020	2/2/2020	5/2/2020	8/2/2020
Revenue	16	15	15	57	18	16	12
% diff to today		280.2%	280.7%		207.5%	267.3%	
Gross Profit	16						
% diff to today		n/a	n/a		n/a	n/a	
EBIT	-103	-104	-138	-96	-136	-164	-141
% diff to today		-7.3%	-37.5%		4.4%	-13.6%	
EBITDA	-102						
% diff to today		n/a	n/a		n/a	n/a	
EPS	-3.72	-3.79	-4.12	-2.05	-4.16	-4.59	-3.83
% diff to today		-45.7%	-50.4%		-17.7%	-25.4%	

Consolidated Income Statement *in millions USD, except diluted EPS (adj.) and common shares

	FY-5	FY-4	FY-3	FY-2	FY-1	FY0	5yr-CAGR
Period end date	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	
Sales	0	0	0	9	16	16	
Gross Income	0	0	0	9	16	16	
EBITDA (adj.)	-24	-22	-45	-82	-92	-102	
EBIT (adj.)	-24	-22	-45	-82	-93	-103	
Earnings Before Tax (adj.)	-24	-21	-45	-82	-90	-96	
Net Income (adj.)	-24	-21	-44	-47	-91	-96	
Diluted EPS (adj.)	-3.40	-1.31	-2.57	-2.62	-3.99	-3.72	
Common Shares	11	17	17	20	26	31	25.0%

Margins & Profitability Ratios

	FY-5	FY-4	FY-3	FY-2	FY-1	FY0	vs. last 5y average (%pts)
Period end date	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	
Gross Margin				100.0%	100.0%	100.0%	
R&D % of Sales				490.4%	491.4%	537.2%	
SG&A % of Sales				186.7%	295.1%	206.2%	
EBITDA Margin (adj.)				-576.7%	-622.1%	-640.3%	
EBIT Margin (adj.)				-579.1%	-626.4%	-643.4%	
Net Margin				-515.7%	-613.0%	-611.6%	
Tax Rate	0.0%	0.0%	1.4%	0.9%	-1.2%	0.8%	
ROA	-48.4%	-20.1%	-38.2%	-34.8%	-41.5%	-32.1%	
ROE	-57.3%	-23.2%	-44.6%	-46.2%	-66.1%	-40.4%	

Per Share Metrics *in USD

	FY-2	FY-1	FY0	FY1
Book Value:	5.62	8.26	8.39	
Free Cash Flow:	0.05	-2.66	-2.83	
Dividend:				0.00
Earnings (EPS):	-2.62	-3.99	-3.72	-3.06

Valuation ratios

	LTM	NTM	FY1	FY2
EV/Sales	29.6 x	7.1 x	6.4 x	40.1 x
EV/EBITDA	nm			
P/E	nm	nm	nm	nm
PE to Growth (PEG)				
EV/FCF	nm			
P/Sales	45.0 x	10.8 x	12.8 x	61.0 x
P/BV	3.0 x			
P/Tangible BV	3.0 x			

Consolidated Balance Sheet *in millions USD

	FY-2	FY-1	FY0
Period end date	12/31/2017	12/31/2018	12/31/2019
Cash & ST Investments	120	218	274
Inventory			
Total Assets	169	268	340
Current Liabilities	13	18	24
Total Debt	0	0	0
Total Liabilities	56	57	67
Total Shareholders Equity	113	211	273

Consolidated Cash Flow Statement *in millions USD

	FY-2	FY-1	FY0
Period end date	12/31/2017	12/31/2018	12/31/2019
Net Income	-47	-91	-96
D&A	0	1	0
Change in WC	44	-4	-10
Cash From Operations	2	-95	-84
Capital Expenditures	-1	0	-2
Cash From Investments	16	-135	-50
Shares Repurchased			
Cash From Financing	67	160	140
Cash & Cash Eq - Period end	62	41	47

Disclosure of General Guidelines for SanaCurrents Strategy

In most situations, SanaCurrents partners take a position in a stock (or buy shares) shortly after a report on a catalyst is published. This is particularly true if the catalyst is within 90 days of the published report. For catalysts with horizons of 6-9 months, or longer, SanaCurrents anticipates the biopharma and device stocks from which it selects catalysts can rise or fall 20-30% in the months following the date of the published report. While buying at a dip, naturally, is preferred, SanaCurrents does not forecast or model in swings in share price prior to the catalyst. SanaCurrents' analytics score models the probability a compelling catalyst will be positive. SanaCurrents expects a positive announcement regarding a catalyst will drive a company's stock to higher level than the price on the date of the report, based on the company's value and capital structure when the report was published. That said, subscribers should exercise their preferred, individual discipline when timing trades, buy or sell, regarding the catalyst forecast.

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