PiperJaffray.

Avalanche Biotechnologies (AAVL)

Overweight

Clarification on P2a AMD Data Expectation And Our Discussions With Management

CONCLUSION

Unfortunately, as a couple of investors have observed, our original industry note this morning erroneously wrote that AAVL "management notes they do know or see the data" and we corrected it to the point that "management notes they do NOT know or see the data" for the 1H15 P2a AVA-101 wet AMD data. Fortunately, investors we spoke with had all realized that was a typo. We've also had a chance to follow-up with management who highlighted that they did not intend for there to be any perceived change in sentiment or expectations. Perhaps it was our own selective hearing or the fatigue of a long week of conference, but we caution investors around over-interpreting any of our comments from this morning.

- Management notes they don't know the data: The company is insistent that there is nothing they know about the trial which would change their views or expectations for the study.
- P2a is a 'safety' study: Management highlighted to us that the P2a study is first and foremost a safety study, and that this has been their message consistently (which is accurate). Of course, given the signal in the P1a study, the efficacy profile in the P2a study will be intensely scrutinized by everyone.
- All ranges of outcomes on the table: The company notes they've consistently also said that all possible outcomes could be seen in the P2a study, ranging from no effect to a dramatic effect, which is also correct. And this is quite a reasonable point to make because of course, anything could be seen in P2a. Perhaps in our meeting with management this week, the fatigue of the week led to what we perceived to be a shift in communication since they started by highlighting the 'middle ground' scenario as one of the options first, but in our discussion today they presented a much more balanced overview of potential outcomes.
- Maybe this is healthy: Given the rapid appreciation of AAVL shares and high expectations from investors, having an opportunity to directly and clearly manage the expectations heading into a binary dataset is constructive for investors.
- So, where SHOULD the bar be? It actually is quite beneficial to start thinking about what level of efficacy would still support a meaningful commercial offering. Certainly, it doesn't need to be as solid as the P1a data, but we believe there needs to be a compelling benefit for a subretinal delivery product in terms of either a very meaningful (50% or more) average reduction in injection frequency or a very dramatic (>1 line vision) average improvement in visual acuity without a reduction in frequency.
- Also consider: AAVL has an intravitreous option in preclinical development which eliminates the subretinal delivery concerns. If 101 data isn't quite up to investors' broader expectations, it may still be a very attractive profile for an intravitreous route option (AVA-201).

PRICE: US\$51.56 TARGET: US\$47.00

DCF thru 2024, 11% discount rate, 6% terminal growth rate

Joshua E. Schimmer, MD

Sr Research Analyst, Piper Jaffray & Co. 212 284-9322, joshua.e.schimmer@pjc.com

Jerry Yang, Ph.D.

Research Analyst, Piper Jaffray & Co. 212 284-9331, jerry.n.yang@pjc.com

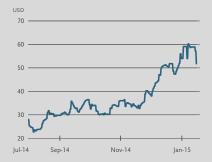
Steven P. Breazzano, Ph.D.

Research Analyst, Piper Jaffray & Co. 212 284-6114, steven.p.breazzano@pjc.com

RISKS TO ACHIEVEMENT OF PRICE TARGET

AAVL gene therapy candidates may fail to achieve target development steps.

Price Performance - 1 Year



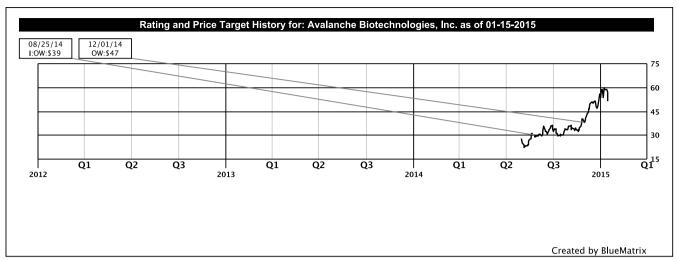
Source: Bloomberg

COMPANY DESCRIPTION

AAVL is a pioneer in gene therapy, targeting ophthalmic indications.

Piper Jaffray does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decisions. This report should be read in conjunction with important disclosure information, including an attestation under Regulation Analyst certification, found on pages 2 - 3 of this report or at the following site: http://www.piperjaffray.com/researchdisclosures

IMPORTANT RESEARCH DISCLOSURES



Notes: The boxes on the Rating and Price Target History chart above indicate the date of the Research Note, the rating, and the price target. Each box represents a date on which an analyst made a change to a rating or price target, except for the first box, which may only represent the first Note written during the past three years.

Legend:

I: Initiating Coverage

R: Resuming Coverage

T: Transferring Coverage

D: Discontinuing Coverage

S: Suspending Coverage

OW: Overweight

N: Neutral

UW: Underweight NA: Not Available UR: Under Review

Distribution of Ratings/IB Services Piper Jaffray				
			IB Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [OW]	384	60.76	97	25.26
HOLD [N]	234	37.03	21	8.97
SELL [UW]	14	2.22	0	0.00

Note: Distribution of Ratings/IB Services shows the number of companies currently in each rating category from which Piper Jaffray and its affiliates received compensation for investment banking services within the past 12 months. FINRA rules require disclosure of which ratings most closely correspond with "buy," "hold," and "sell" recommendations. Piper Jaffray ratings are not the equivalent of buy, hold or sell, but instead represent recommended relative weightings. Nevertheless, Overweight corresponds most closely with buy, Neutral with hold and Underweight with sell. See Stock Rating definitions below.

Analyst Certification — Joshua E. Schimmer, MD, Sr Research Analyst

- Jerry Yang, Ph.D., Research Analyst

- Steven P. Breazzano, Ph.D., Research Analyst

The views expressed in this report accurately reflect my personal views about the subject company and the subject security. In addition, no part of my compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report.



Research Disclosures

Piper Jaffray was making a market in the securities of Avalanche Biotechnologies, Inc. at the time this research report was published. Piper Jaffray will buy and sell Avalanche Biotechnologies, Inc. securities on a principal basis.

Piper Jaffray expects to receive or intends to seek compensation for investment banking services from Avalanche Biotechnologies, Inc. in the next 3 months.

Piper Jaffray has received compensation for investment banking services from or has had a client relationship with Avalanche Biotechnologies, Inc. within the past 12 months.

Within the past 12 months Piper Jaffray was a managing underwriter of a public offering of, or dealer manager of a tender offer for, the securities of Avalanche Biotechnologies, Inc. or the securities of an affiliate.

Within the past 3 years Piper Jaffray participated in a public offering of, or acted as a dealer manager for, Avalanche Biotechnologies, Inc. securities.

Piper Jaffray research analysts receive compensation that is based, in part, on overall firm revenues, which include investment banking revenues.

Rating Definitions

Stock Ratings: Piper Jaffray ratings are indicators of expected total return (price appreciation plus dividend) within the next 12 months. At times analysts may specify a different investment horizon or may include additional investment time horizons for specific stocks. Stock performance is measured relative to the group of stocks covered by each analyst. Lists of the stocks covered by each are available at www.piperjaffray.com/ researchdisclosures. Stock ratings and/or stock coverage may be suspended from time to time in the event that there is no active analyst opinion or analyst coverage, but the opinion or coverage is expected to resume. Research reports and ratings should not be relied upon as individual investment advice. As always, an investor's decision to buy or sell a security must depend on individual circumstances, including existing holdings, time horizons and risk tolerance. Piper Jaffray sales and trading personnel may provide written or oral commentary, trade ideas, or other information about a particular stock to clients or internal trading desks reflecting different opinions than those expressed by the research analyst. In addition, Piper Jaffray technical research products are based on different methodologies and may contradict the opinions contained in fundamental research reports.

- Overweight (OW): Anticipated to outperform relative to the median of the group of stocks covered by the analyst.
- Neutral (N): Anticipated to perform in line relative to the median of the group of stocks covered by the analyst.
- Underweight (UW): Anticipated to underperform relative to the median of the group of stocks covered by the analyst.

Other Important Information

The material regarding the subject company is based on data obtained from sources we deem to be reliable; it is not guaranteed as to accuracy and does not purport to be complete. This report is solely for informational purposes and is not intended to be used as the primary basis of investment decisions. Piper Jaffray has not assessed the suitability of the subject company for any person. Because of individual client requirements, it is not, and it should not be construed as, advice designed to meet the particular investment needs of any investor. This report is not an offer or the solicitation of an offer to sell or buy any security. Unless otherwise noted, the price of a security mentioned in this report is the market closing price as of the end of the prior business day. Piper Jaffray does not maintain a predetermined schedule for publication of research and will not necessarily update this report. Piper Jaffray policy generally prohibits research analysts from sending draft research reports to subject companies; however, it should be presumed that the analyst(s) who authored this report has had discussions with the subject company to ensure factual accuracy prior to publication, and has had assistance from the company in conducting diligence, including visits to company sites and meetings with company management and other representatives.

Notice to customers: This material is not directed to, or intended for distribution to or use by, any person or entity if Piper Jaffray is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to such person or entity. Customers in any of the jurisdictions where Piper Jaffray and its affiliates do business who wish to effect a transaction in the securities discussed in this report should contact their local Piper Jaffray representative. Europe: This material is for the use of intended recipients only and only for distribution to professional and institutional investors, i.e. persons who are authorised persons or exempted persons within the meaning of the Financial Services and Markets Act 2000 of the United Kingdom, or persons who have been categorised by Piper Jaffray Ltd. as professional clients under the rules of the Financial Conduct Authority. United States: This report is distributed in the United States by Piper Jaffray & Co., member SIPC, FINRA and NYSE, Inc., which accepts responsibility for its contents. The securities described in this report may not have been registered under the U.S. Securities Act of 1933 and, in such case, may not be offered or sold in the United States or to U.S. persons unless they have been so registered, or an exemption from the registration requirements is available.

This report is produced for the use of Piper Jaffray customers and may not be reproduced, re-distributed or passed to any other person or published in whole or in part for any purpose without the prior consent of Piper Jaffray & Co. Additional information is available upon request.

Copyright 2015 Piper Jaffray. All rights reserved.