FLASH NOTE

Company Update

USA | Healthcare | Biotechnology

October 20, 2014

Jefferies

Avalanche Biotechnologies (AAVL)
Incremental Updates From AAO

BUY
Price target $40.00
Price $30.21

EQUITY RESEARCH AMERICAS

Key Takeaway

The dataset of relevance to AAVL is from the HARBOR data that evaluated the pot'l increased risk of geographic atrophy (GA) w/ anti-VEGF use. The data shows no risk w/ increased doses of anti-VEGF. However, monthly anti-VEGF had a higher risk of GA but this was driven by the 0.5 mg dose arm and was not observed in the 2.0 mg arm. These data confirm sustained anti-VEGF inhibition through gene therapy should not have long-term safety ramifications.

HARBOR Data Shows No Difference With Anti-VEGF Use: An ongoing debate on the risk of development of GA w/ anti-VEGF has been partially answered w/ the post-hoc analysis of the HARBOR trial evaluating Lucentis 2.0 mg vs 0.5 mg either on a monthly/prn regimen. Of eyes w/ no GA at baseline, 21% reported GA at yr 1, and 29% at yr 2. GA may be associated w/ the CNV lesion itself and not necessarily due to anti-VEGF use. To answer this question, investigators evaluated Lucentis 2.0 mg vs 0.5 mg to determine whether higher doses caused increased GA risk. Lucentis 2.0 mg was not associated w/ increased risk of GA. However, monthly anti-VEGF was associated w/ increased risk of GA (HR ~ 1.3) but was driven by the 0.5 mg prn arm whereas the 2.0 mg prn arm did not observe increased GA risk. Furthermore, vision was not impacted significantly btwn atrophy eyes v. no atrophy eyes w/ a 2.1 letter difference at yr 1 and 2.7 letter difference at yr 2.

Does Vitrectomy Influence Anti-VEGF Efficacy? Since AVA-101 gene therapy requires a vitrectomy, some investors have asked whether a vitrectomy could potentially diminish efficacy of subsequent anti-VEGF injections. Data at AAO were presented from the DRCR Protocol I trial evaluating vision outcomes of Lucentis in eyes w/ prior vitrectomy. While a small grp of pts in Protocol I (7%; n = 25) had prior vitrectomy, the trial reported an 11-letter change in vitrectomy eyes at yr 2 v. a 9-letter change in non-vitrectomy eyes. Mean change in OCT central retinal thickness was comparable btwn the two groups at yr 2. These data suggest vitrectomy does not impact efficacy of anti-VEGF agents.

Recap of AAVL Investor Event At AAO: AAVL hosted an investor event on Saturday morning w/ key focus on administration and long-term durability of gene therapy such as AVA-101 in wet AMD. A three-physician panel believes the subretina administration will require physician training and some level of skill will be involved for proper administration. However, the benefits of subretina administration are outweighed by pot'l efficacy/safety clinical differences over intravitreal administration. Also, complications associated w/ a vitrectomy appear small given current procedures utilize a small gauge cannula to minimize risk of retina detachments and endopthalmitis. All three physicians on the panel agreed that AVA-101 would need to show 1-yr minimum durability although 2-yr durability is optimal to better penetrate the market. AAVL would evaluate 2-yr efficacy in its PIIb trial expected to initiate in 2H '15. Also, there was agreement that all pts would initiate w/ 3-4 inj of anti-VEGF and pts w/ frequent injections (defined as < every 7-8 weeks) would be eligible to switch to AVA-101.

Update On Other Wet AMD Programs At AAO: Allergan (AGN, $177.49, Hold) is preparing to initiate a PIII program w/ abicipar (DARPin) in wAMD in 2015 w/ a q8 and q12 week regimen. A current trial in 25 pts in Japan which initiated in Aug '14 should inform on abicipar's safety profile given this trial is dosing pts w/ a PIII formulation. Novartis (NOVN VX, CHF 82.20, Hold) presented 11-pt data w/ its Replenish pump; however, one pt observed a hemorrhage, and four pts reported damage to the pump. While Replenish is an interesting concept, it may not be feasible given the device is quite large and may cause long-term complications.

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Company Description

Avalanche Biotechnologies, Inc., a clinical-stage biotechnology company, focuses on discovering and developing novel gene therapies for the treatment of ophthalmic diseases based on its Ocular BioFactory platform. Its lead product candidate includes AVA-101, which is in a Phase I/IIa trial for the treatment of wet age-related macular degeneration (AMD). The company is also developing AVA-201, an anti-vascular endothelial growth factor gene therapy product candidate for the prevention of wet AMD; and AVA-311 that is in preclinical studies for the treatment of juvenile X-linked retinoschisis, a rare genetic disease of the retina with no approved therapy. Avalanche Biotechnologies, Inc. has a collaboration agreement with Regeneron Pharmaceuticals, Inc. research, develop, and commercialize gene therapy products. The company was founded in 2006 and is headquartered in Menlo Park, California.

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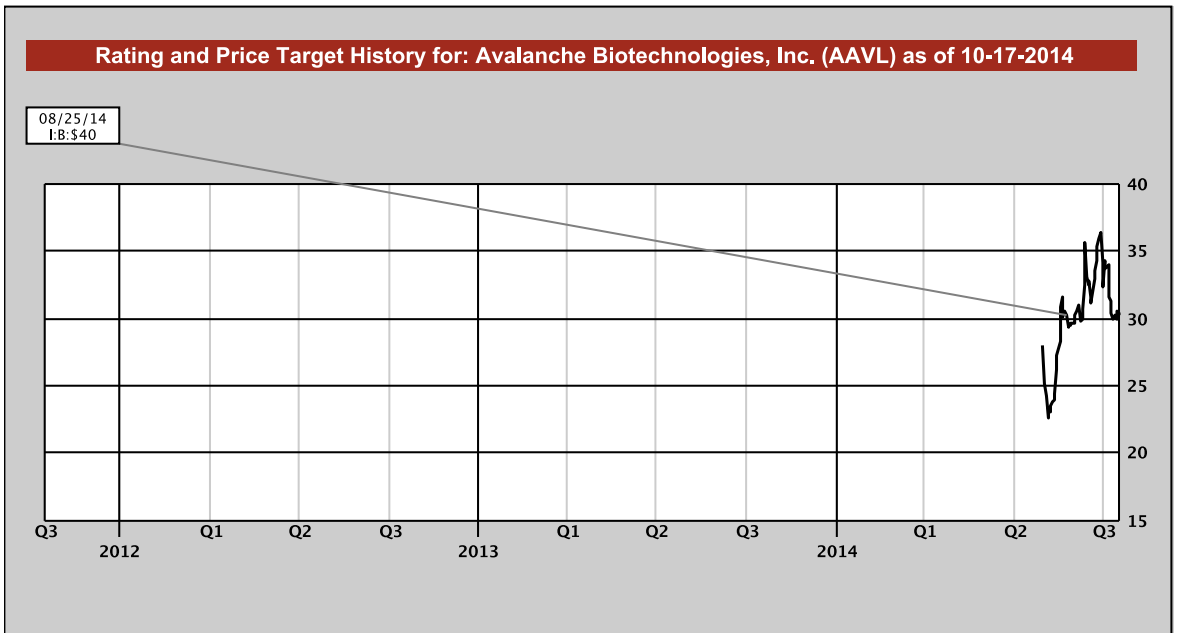
Other Companies Mentioned in This Report

- Allergan, Inc. (AGN: $177.49, HOLD)
- Novartis AG (NOVN VX: CHF82.20, BUY)
- Sanofi (SAN FP: €81.25, BUY)



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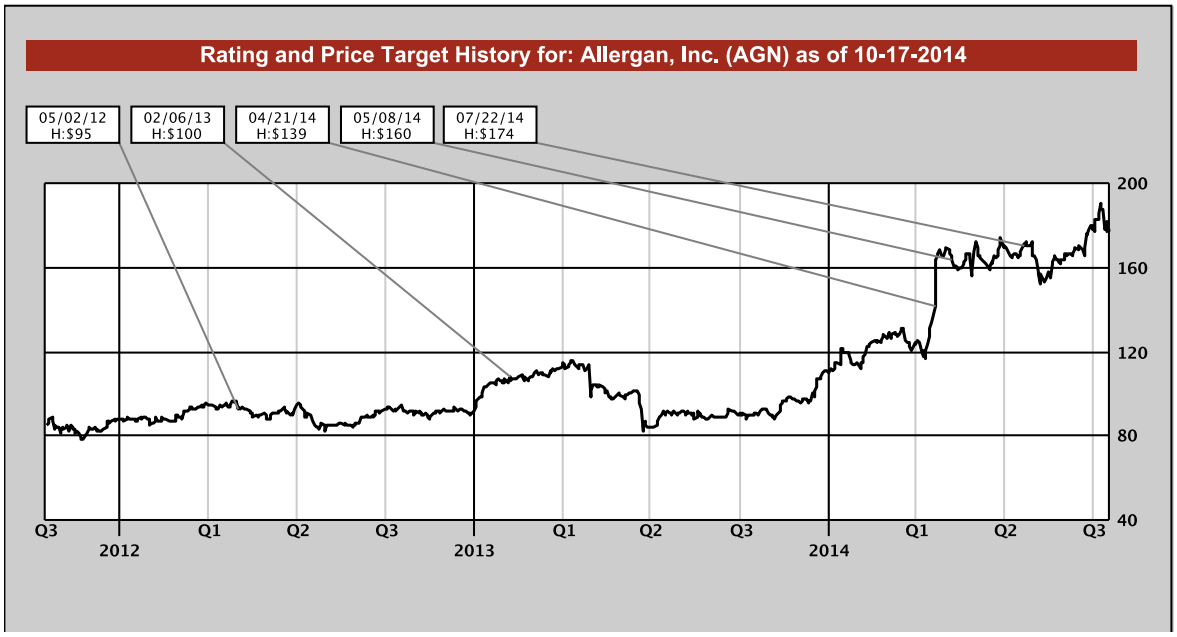

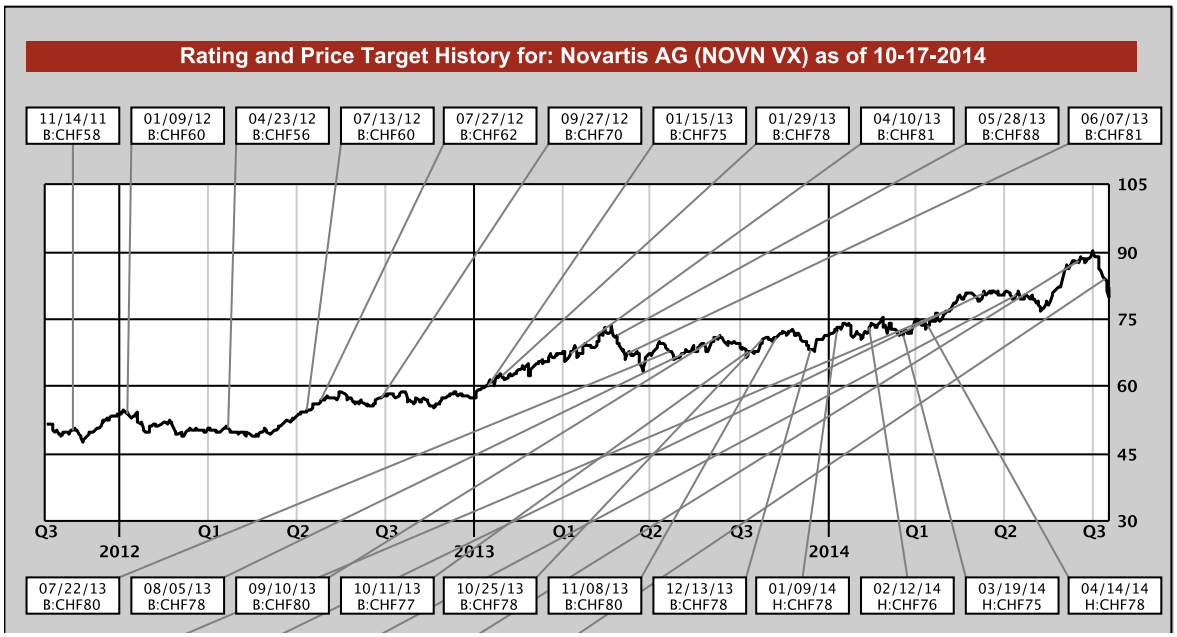

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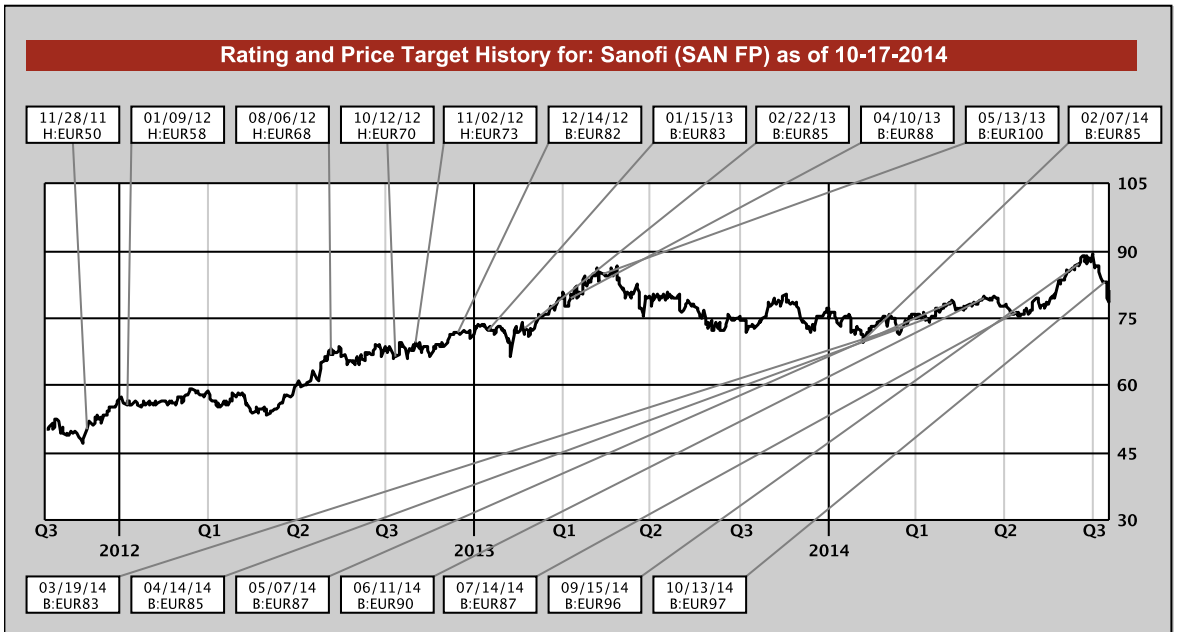

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