

March 6, 2015

CALA-NASDAQ--Outperform (1) / V

Biotechnology

CALA: HK-II License Helps Further Position Calithera As A Leader In Cancer Cell Metabolism

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Sector Rating: Biotechnology, Market Weight

****After the 3/5/15 market close** Calithera announced it had signed an exclusive, worldwide license for TransTech Pharma's hexokinase-II (HK-II) inhibitor program with an upfront payment of \$600,000, development/regulatory payments totaling \$30.5M and sales-based milestones up to \$77M.

****HK-II is the first enzyme in the pathway that enables cancer cells to convert glucose to energy and plays a key role in generation of metabolites important for tumor growth/survival, such as lactate, ATP, NADPH, and glutathione. HK-II is over-expressed in a number of cancers with levels up to 200 times higher than non-cancerous tissues.**

****After the program is brought in house** Calithera will be able to better assess timelines, a potential IND filing, and initiation of human studies. Although preliminary data suggest there may be synergies with dual inhibition of glutaminase and HK-II, Calithera initially expects to develop an HK-II inhibitor as a stand-alone program.

****CB-839 update:** Dose-expansion cohorts for two of the three Ph. I monotherapy studies are under-way with the 3rd study to enter the expansion phase soon. At the AACR Meeting (4/18-4/22) there will be five preclinical presentations focused on biomarker data and the rationale for combination approaches for inhibition of glutaminase and cancer signaling pathways. There will be two oral presentations: one by a leading metabolism expert, Dr. DeBerardinis (Texas Southwestern Medical Center) discussing CB-839 in NSCLC and the other by Calithera. Abstracts have been submitted for the ASCO (Ph. I solid tumor dose-escalation study) and the EHA Meetings (Ph. I hematology studies). By year-end more mature Ph. I monotherapy data and early Ph. I(b) combination data will be presented at the SABCS and ASH Meetings.

****BOTTOM LINE:** Calithera now has programs targeting the two key pathways which provide energy necessary for cancer cell growth/survival, helping further establish the company as a leader in cancer cell metabolism. Lead program CB-839 continues to progress well and we see Ph. I updates in 2015 as providing important potential clinical validation and catalysts for CALA shares.

Calithera Biosciences, Inc. (CALA-NASDAQ)

Price as of 3/5/2015: \$13.31

FY 14 EPS: \$-2.40

FY 15 EPS: \$-1.56

Shares Out.: 17.9 MM

Market Cap.: \$238.25 MM

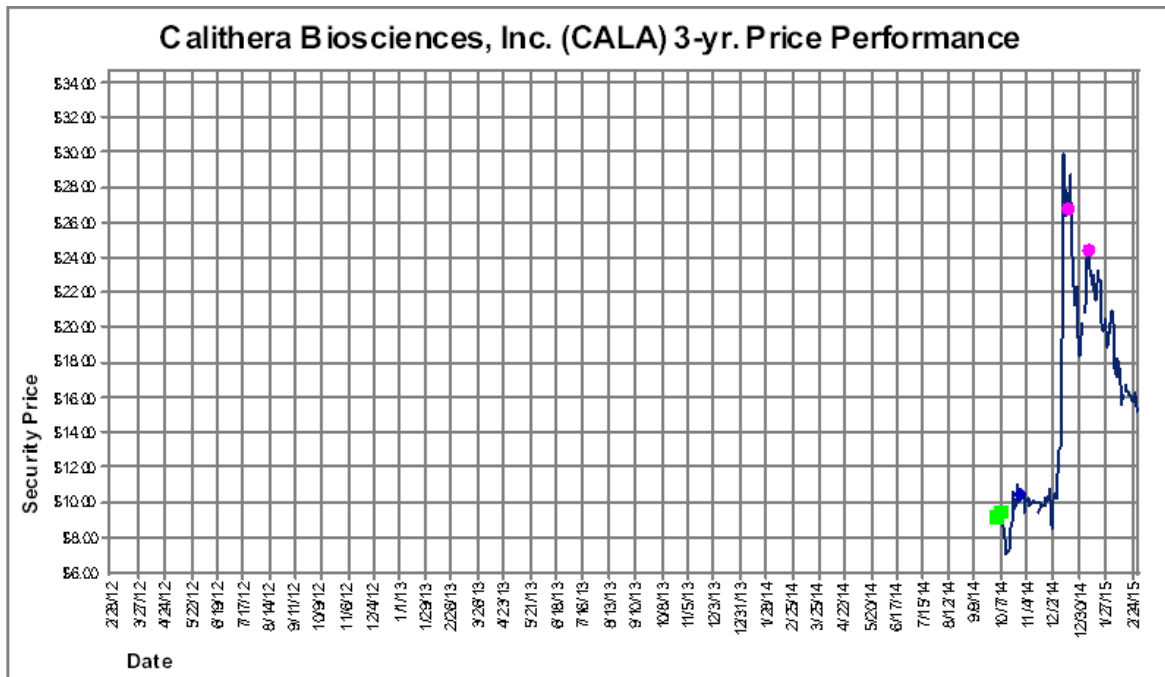
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Required Disclosures



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□	10/3/2014		IPO at \$10.00			
	10/27/2014		Andrews			
◆	10/27/2014	11.04	1	19.00	20.00	10.40
●	12/15/2014	29.85	1	50.00	55.00	26.75
●	1/7/2015	23.85	1	35.00	40.00	24.40

Source: Wells Fargo Securities, LLC estimates and Reuters data

Symbol Key

▼	Rating Downgrade	◆	Initiation, Resumption, Drop or Suspend
▲	Rating Upgrade	■	Analyst Change
●	Valuation Range Change	□	Split Adjustment

Rating Code Key

1	Outperform/Buy	SR	Suspended
2	Market Perform/Hold	NR	Not Rated
3	Underperform/Sell	NE	No Estimate

Additional Information Available Upon Request

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CALA: Key risks include clinical trial failure, a safety signal for CB-839, and financing risk.

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3 = Underperform: The stock appears overvalued, and we believe the stock's total return will be below the market over the next 12 months. SELL

SECTOR RATING

O = Overweight: Industry expected to outperform the relevant broad market benchmark over the next 12 months.

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As of: March 6, 2015

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