

April 22, 2015

CALA-NASDAQ--Outperform (1) / V

Biotechnology

CALA: AACR--Important CB-839 Biomarker Data Presented--Looking To ASCO/EHA Meetings For Maturing Ph. I Data

Matthew J. Andrews, Senior Analyst (617) 603-4218

Sector Rating: Biotechnology, Market Weight

****On 4/21/15 we attended the American Association of Clinical Research's Metabolism Minisymposium where two preclinical abstracts for CALA's CB-839 were highlighted.**

****#4710 was research in non-small cell lung cancer (NSCLC) jointly conducted by Dr. DeBerardinis' lab (a cancer metabolism expert) and MD Anderson Cancer Center. The research highlighted how sensitive Epidermal-Growth Factor Receptor (EGFR) and Kirsten rat sarcoma (KRAS) mutant (mt) NSCLC cells are to glutaminase inhibition.**

****#4711 was conducted by Calithera and demonstrated how sensitive Renal clear cell cancer (RCC) and KRASmt and EGFRmt NSCLC cancers are to glutaminase inhibition, and the synergies of CB-839 with everolimus in RCC, selumetinib in KRASmt NSCLC, and erlotinib in EGFRmt NSCLC.**

****Separately #1123 (Okazaki) showed synergies of CB-839 with Poly ADP-ribose polymerase inhibitors (e.g., BioMarin's PARPi, BMN-673).**

****In our view CALA's combinatorial data are important as they may enable use of validated EGFR/KRAS biomarkers to identify patients more likely to respond to CB-839, potentially reducing clinical/regulatory/commercial risks.**

****Recall CALA selected KRAS NSCLC and RCC as two cohorts for ongoing testing of CB-839 600mg twice-daily and CB-839/everolimus in RCC as a cohort for Ph. I(b) study.**

****4/20-4/21/15 stock weakness (CALA -23% vs. S&P500's +0.6%) appears related to Agios' comments over the weekend at an AACR session where it noted it was unable to generate single-agent activity in NSCLC cell line(s) or identify biomarkers, and announced it discontinued its glutaminase inhibitor program. CALA's sell-off and using Agios' discontinued program as a read-through to CB-839's potential for failure appears unwarranted, in our view, considering: (1) CALA's identification of four biomarkers, (2) four cases of Ph. I disease stabilization at low doses (to be updated at the American Society of Clinical Oncology and European Hematology Association Meetings), (3) CB-839's well-defined clinical development program, and (4) abstracts/posters/peer-reviewed preclinical publications during 2014/2015.**

****BOTTOM LINE: Additional positive data importantly identifying two potential validated biomarkers, however, overshadowed by Agios' comments. We look to ASCO/EHA Meetings to further define CB-839's promising profile and broad development program.**

Calithera Biosciences, Inc. (CALA-NASDAQ)

Price as of 4/21/2015: \$13.99

FY 15 EPS: \$-1.83

FY 16 EPS: \$-1.99

Please see Disclosure Appendix for rating definitions, important disclosures, and required analyst certifications.

All estimates/forecasts are as of 04/22/15 unless otherwise stated.

Wells Fargo Securities, LLC 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 the report and investors should consider this report as only a single factor in making their investment decision.

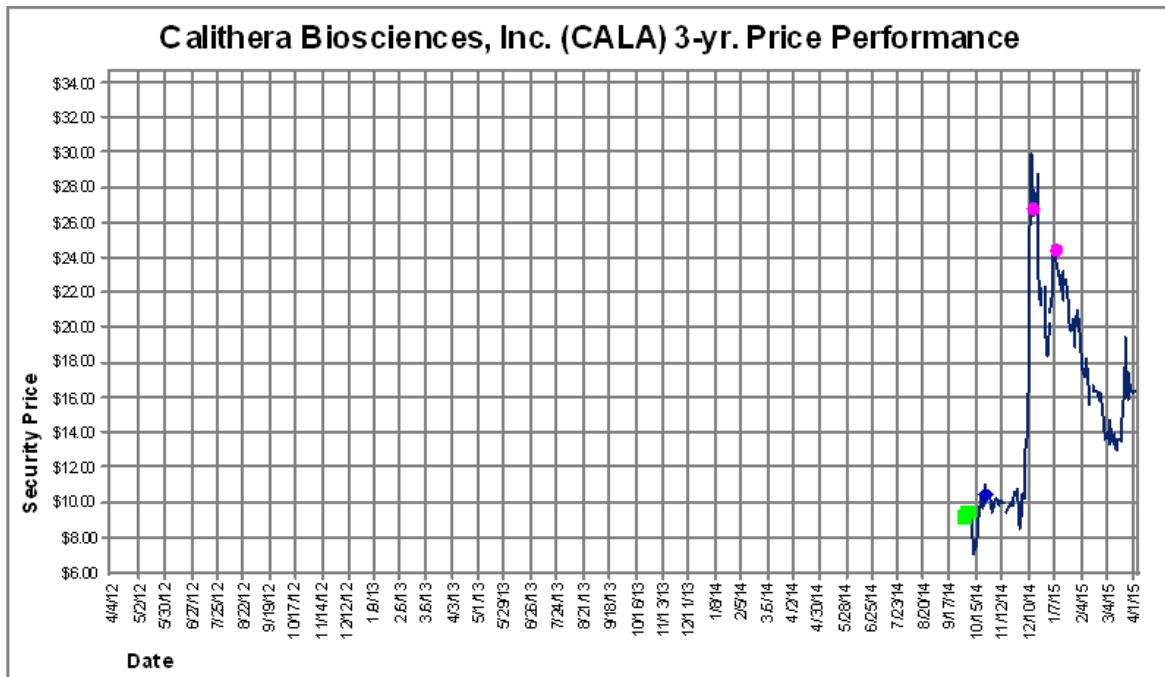
Shares Out.: 17.93 MM
Market Cap.: \$250.84 MM

Please see Disclosure Appendix for rating definitions, important disclosures, and required analyst certifications.
All estimates/forecasts are as of 04/22/15 unless otherwise stated.

Wells Fargo Securities, LLC 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 the report and investors should consider this report as only a single factor in making their investment decision.

DISCLOSURE APPENDIX

Required Disclosures



	Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
□	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
- ▲ Rating Upgrade
- Valuation Range Change

- ◆ Initiation, Resumption, Drop or Suspend
- Analyst 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

I certify that:

- 1) All views expressed in this research report accurately reflect my personal views about any and all of the subject securities or issuers discussed; and
- 2) No part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by me in this research report.

Please see Disclosure Appendix for rating definitions, important disclosures, and required analyst certifications.

All estimates/forecasts are as of 04/22/15 unless otherwise stated.

Wells Fargo Securities, LLC 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 the report and investors should consider this report as only a single factor in making their investment decision.

Wells Fargo Securities, LLC maintains a market in the common stock of Calithera Biosciences, Inc. Wells Fargo Securities, LLC or its affiliates managed or co-managed a public offering of securities for Calithera Biosciences, Inc. within the past 12 months. Wells Fargo Securities, LLC or its affiliates received compensation for investment banking services from Calithera Biosciences, Inc. in the past 12 months. Calithera Biosciences, Inc. currently is, or during the 12-month period preceding the date of distribution of the research report was, a client of Wells Fargo Securities, LLC. Wells Fargo Securities, LLC provided investment banking services to Calithera Biosciences, Inc.

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

Wells Fargo Securities, LLC does not compensate its research analysts based on specific investment banking transactions. Wells Fargo Securities, LLC's research analysts receive compensation that is based upon and impacted by the overall profitability and revenue of the firm, which includes, but is not limited to investment banking revenue.

STOCK RATING

1 = Outperform: The stock appears attractively valued, and we believe the stock's total return will exceed that of the market over the next 12 months. BUY

2 = Market Perform: The stock appears appropriately valued, and we believe the stock's total return will be in line with the market over the next 12 months. HOLD

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.

M = Market Weight: Industry expected to perform in-line with the relevant broad market benchmark over the next 12 months.

U = Underweight: Industry expected to underperform the relevant broad market benchmark over the next 12 months.

VOLATILITY RATING

V = A stock is defined as volatile if the stock price has fluctuated by +/-20% or greater in at least 8 of the past 24 months or if the analyst expects significant volatility. All IPO stocks are automatically rated volatile within the first 24 months of trading.

As of: April 22, 2015

44% of companies covered by Wells Fargo Securities, LLC Equity Research are rated Outperform.	Wells Fargo Securities, LLC has provided investment banking services for 42% of its Outperform-rated companies.
---	---

55% of companies covered by Wells Fargo Securities, LLC Equity Research are rated Market Perform.	Wells Fargo Securities, LLC has provided investment banking services for 31% of its Market Perform-rated companies.
---	---

2% of companies covered by Wells Fargo Securities, LLC Equity Research are rated Underperform.	Wells Fargo Securities, LLC has provided investment banking services for 29% of its Underperform-rated companies.
--	---

Important Disclosure for International Clients

EEA - The securities and related financial instruments described herein may not be eligible for sale in all jurisdictions or to certain categories of investors. For recipients in the EEA, this report is distributed by Wells Fargo Securities International Limited ("WFSIL"). WFSIL is a U.K. incorporated investment firm authorized and regulated by the Financial Conduct Authority. For the purposes of Section 21 of the UK Financial Services and Markets Act 2000 ("the Act"), the content of this report has been approved by WFSIL a regulated person under the Act. WFSIL does not deal with retail clients as defined in the Markets in Financial Instruments Directive 2007. The FCA rules made under the Financial Services and Markets Act 2000 for the protection of retail clients will therefore not apply, nor will the Financial Services Compensation Scheme be available. This report is not intended for, and should not be relied upon by, retail clients.

Please see Disclosure Appendix for rating definitions, important disclosures, and required analyst certifications.

All estimates/forecasts are as of 04/22/15 unless otherwise stated.

Wells Fargo Securities, LLC 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 the report and investors should consider this report as only a single factor in making their investment decision.
--

Australia - Wells Fargo Securities, LLC is exempt from the requirements to hold an Australian financial services license in respect of the financial services it provides to wholesale clients in Australia. Wells Fargo Securities, LLC is regulated under U.S. laws which differ from Australian laws. Any offer or documentation provided to Australian recipients by Wells Fargo Securities, LLC in the course of providing the financial services will be prepared in accordance with the laws of the United States and not Australian laws.

Canada - This report is distributed in Canada by Wells Fargo Securities Canada, Ltd., a registered investment dealer in Canada and member of the Investment Industry Regulatory Organization of Canada (IIROC) and Canadian Investor Protection Fund (CIPF).

Hong Kong - This report is issued and distributed in Hong Kong by Wells Fargo Securities Asia Limited ("WFSAL"), a Hong Kong incorporated investment firm licensed and regulated by the Securities and Futures Commission of Hong Kong ("the SFC") to carry on types 1, 4, 6 and 9 regulated activities (as defined in the Securities and Futures Ordinance (Cap. 571 of The Laws of Hong Kong), "the SFO"). This report is not intended for, and should not be relied on by, any person other than professional investors (as defined in the SFO). Any securities and related financial instruments described herein are not intended for sale, nor will be sold, to any person other than professional investors (as defined in the SFO). The author or authors of this report is or are not licensed by the SFC. Professional investors who receive this report should direct any queries regarding its contents to Mark Jones at WFSAL (email: wfsalresearch@wellsfargo.com).

Japan - This report is distributed in Japan by Wells Fargo Securities (Japan) Co., Ltd, registered with the Kanto Local Finance Bureau to conduct broking and dealing of type 1 and type 2 financial instruments and agency or intermediary service for entry into investment advisory or discretionary investment contracts. This report is intended for distribution only to professional investors (Tokutei Touseika) and is not intended for, and should not be relied upon by, ordinary customers (Ippan Touseika).

The ratings stated on the document are not provided by rating agencies registered with the Financial Services Agency of Japan (JFSA) but by group companies of JFSA-registered rating agencies. These group companies may include Moody's Investors Services Inc., Standard & Poor's Rating Services and/or Fitch Ratings. Any decisions to invest in securities or transactions should be made after reviewing policies and methodologies used for assigning credit ratings and assumptions, significance and limitations of the credit ratings stated on the respective rating agencies' websites.

About Wells Fargo Securities

Wells Fargo Securities is the trade name for the capital markets and investment banking services of Wells Fargo & Company and its subsidiaries, including but not limited to Wells Fargo Securities, LLC, a U.S. broker-dealer registered with the U.S. Securities and Exchange Commission and a member of NYSE, FINRA, NFA and SIPC, Wells Fargo Institutional Securities, LLC, a member of FINRA and SIPC, Wells Fargo Prime Services, LLC, a member of FINRA, NFA and SIPC, Wells Fargo Securities Canada, Ltd., a member of IIROC and CIPF, Wells Fargo Bank, N.A. and Wells Fargo Securities International Limited, authorized and regulated by the Financial Conduct Authority.

This report is for your information only and is not an offer to sell, or a solicitation of an offer to buy, the securities or instruments named or described in this report. Interested parties are advised to contact the entity with which they deal, or the entity that provided this report to them, if they desire further information. The information in this report has been obtained or derived from sources believed by Wells Fargo Securities, LLC, to be reliable, but Wells Fargo Securities, LLC does not represent that this information is accurate or complete. Any opinions or estimates contained in this report represent the judgment of Wells Fargo Securities, LLC, at this time, and are subject to change without notice. For the purposes of the U.K. Financial Conduct Authority's rules, this report constitutes impartial investment research. Each of Wells Fargo Securities, LLC and Wells Fargo Securities International Limited is a separate legal entity and distinct from affiliated banks. Copyright © 2015 Wells Fargo Securities, LLC.

SECURITIES NOT FDIC-INSURED/NOT BANK-GUARANTEED/MAY LOSE VALUE

Please see Disclosure Appendix for rating definitions, important disclosures, and required analyst certifications.

All estimates/forecasts are as of 04/22/15 unless otherwise stated.

Wells Fargo Securities, LLC 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 the report and investors should consider this report as only a single factor in making their investment decision.