Agios Pharmaceuticals Inc

Equity Research

Earnings Update

May 8, 2014

Price: $40.78 (05/7/2014)

Price Target: NA

OUTPERFORM (1)

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Key Data

Symbol	NASDAQ: AGIO
52-Week Range:	$49.79 - 15.77
Market Cap (MM):	$1,378.3
Net Debt (MM):	$0.0
Cash/Share:	$5.34
Dil. Shares Out (MM):	31.4
Enterprise Value (MM):	$1,184.4
ROIC:	NA
ROE (LTM):	NA
BV/Share:	$4.21
Dividend:	NA

FY (Dec)	2013A	2014E	2015E
Earnings Per Share			
Q1	$(0.37)	$(0.39)A	-
Prior Q1	-	*$(0.40)*	-
Q2	$(0.34)	$(0.44)	-
Prior Q2	-	*$(0.40)*	-
Q3	$(0.49)	$(0.29)	-
Prior Q3	-	*$(0.20)*	-
Q4	$(0.39)	$(0.45)	-
Prior Q4	-	*$(0.31)*	-
Year	$(1.52)	$(1.57)	$(1.40)
Prior Year	-	*$(1.30)*	*$(0.96)*
P/E	NM	NM	NM
Consensus EPS	$(1.62)	$(1.32)	$(1.06)
Prior Year	-	*$(0.86)*	*$(0.45)*

Consensus source: Thomson Reuters

Revenue (MM)			
Year	$25.5	$39.6	$50.0
Prior Year	-	*$38.4*	*$55.0*
EV/S	46.4x	29.9x	23.7x

Three Candidates In The Clinic; Next '221 Update At EHA

The Cowen Insight

Agios reported an in-line Q1, including enough pro-forma cash to last through mid-2017. Agios announced that there will be an update on AG-221's Phase I trial in IDH2m liquid tumors at EHA (June 12-15). Management tone remains very confident on plans to move AG-221 into Phase II in 2014. With 3 candidates now in the clinic, we expect continued value-creating updates to drive share appreciation.

Financials In Line, Cash Position Solid.

Agios reported a net loss of $12.2MM, in line with our $13.1MME. OpEx of $20.7MM (vs. our $19.8MME) included $1.5MM in stock comp. Agios ended Q1 with $167MM in cash, although this excludes $95MM in net proceeds from an April equity offering and a $20MM collaboration extension payment from Celgene, expected later this month. Agios guided to YE:14 cash of >$200MM, and believes that cash on hand will fund operations through mid-2017.

Next '221 Update At EHA In June.

Agios announced that there will be an oral late-breaker presentation at EHA (June 12-15) with updated data from AG-221's Phase I dose-escalation trial in IDH2-mutant liquid tumors. Recall that the first data presentation at AACR in early April showed remarkable efficacy for AG-221 in the first two dose cohorts enrolled (30mg BID and 50 mg BID), with 6 of 7 evaluable patients achieving a response. With followup short in the AACR presentation (data cutoff March 20), durability of the observed responses remains to be determined. At EHA, we expect further followup on the 5 responding patients that remained on study drug in the AACR presentation, which should begin to shed light on the durability question. The other interesting observation in the two dose cohorts presented at AACR was that responses appeared to be developing faster at 50mg BID than 30mg BID. We would expect initial data on the 75mg BID and 100mg QD dose cohorts at EHA, which should help determine dose response trends.

Management tone remains highly confident on the intended move of AG-221 into Phase II monotherapy expansion cohorts in H2:2014. Therefore, our sense is that negative surprises in the EHA presentation are unlikely.

AG-120 And AG-348 Also Now In Trials

Two Phase I trials for AG-120 in IDH1-mutant solid and liquid tumors began in March. Agios indicated that initial data from these trials would be presented in 2015.

Separately, a Phase I single dose escalation study on AG-348 for PKR deficiency began in April in healthy volunteers, with a Phase I multiple ascending dose study planned for H2:14. Data from these trials, as well as an ongoing natural history study, will be presented in 2015.

At A Glance

Our Investment Thesis

AG-221 showed promising Phase I efficacy data in April, with 6 of 7 evaluable relapsed/refractory AML patients achieving a response. Agios plans to begin Phase II dose expansion cohorts in 2014. Meanwhile, AGI-120 entered two Phase I trials in solid and liquid IDH1-mutant tumors in March. We believe AG-221 and AG-120 could generate $600MM+ and $400MM+ in global revenue, respectively. Agios' leading IEM candidate is AG-348 for pyruvate kinase deficiency, a rare form of hemolytic anemia. The unmet need is great in this indication, and there may be 1,000 - 3,000 diagnosed patients in the U.S. alone. AG-348 entered Phase I in healthy volunteers in April 2014, and should move into patients by 2015. We believe AG-348 could generate $600MM + in peak revenue, and is wholly owned by Agios. We expect multiple value-creating clinical readouts to drive stock outperformance over the next 12-18 months.

Forthcoming Catalysts

- Updated clinical data on AG-221 for IDH2m cancer at EHA (June)
- Move AG-221 into Phase II (2014)
- Initial clinical data on AG-120 for IDH1m cancer (2015)
- Initial clinical data on AG-348 for PKR deficiency (2015)

Base Case Assumptions

- Agios succeeds in developing at least two targeted cancer therapies

Upside Scenario

- Agios succeeds in developing more than two targeted cancer therapies

Downside Scenario

- Agios is not successful in developing any drugs

Price Performance

Source: Bloomberg

Company Description

Agios Pharmaceuticals is leveraging its leading expertise in cellular metabolism to develop therapeutics in two related areas: (1) cancer metabolism and (2) inborn errors of metabolism (IEMs). All of Agios' programs follow a "precision medicine" strategy, meaning that the targeted patients are well-defined and prospectively identifiable, that the drug candidates are tailored to meet the specific patient segments' needs, and that a biomarker is available to provide early proof of mechanism in humans. We applaud this approach, as we believe it drives to value inflection points quickly, while minimizing risk and potentially abbreviating time to market. A partnership with Celgene provides nondilutive financing and validation of Agios' leadership position in cancer metabolism, while Agios retains meaningful economics.

Analyst Top Picks

	Ticker	Price (05/7/2014)	Price Target	Rating
Agios Pharmaceuticals Inc	AGIO	$40.78	$NA	Outperform
MEI Pharma	MEIP	$6.73	$NA	Outperform

Investment Thesis

Agios Pharmaceuticals is leveraging its leading expertise in cellular metabolism to develop therapeutics in two related areas: (1) cancer metabolism and (2) inborn errors of metabolism (IEMs). All of Agios' programs follow a "precision medicine" strategy, meaning that the targeted patients are well-defined and prospectively identifiable, that the drug candidates are tailored to meet the specific patient segments' needs, and that a biomarker is available to provide early proof of mechanism in humans. We applaud this approach, as we believe it drives to value inflection points quickly, while minimizing risk and potentially abbreviating time to market. Agios' lead candidates in cancer, AG-221 and AG-120, target several cancers mutant in the metabolic genes IDH2 and IDH1, respectively. AG-221 showed promising Phase I efficacy data in April, with 6 of 7 evaluable relapsed/refractory AML patients achieving a response. Agios plans to begin Phase II dose expansion cohorts in 2014. Meanwhile, AGI-120 entered two Phase I trials in solid and liquid IDH1-mutant tumors in March. We believe AG-221 and AG-120 could generate $600MM+ and $400MM+ in global revenue, respectively. A partnership with Celgene provides validation of Agios' leadership position in cancer metabolism, while Agios retains meaningful economics. Agios' leading IEM candidate is AG-348 for pyruvate kinase deficiency, a rare form of hemolytic anemia. The unmet need is great in this indication, and there may be 1,000 - 3,000 diagnosed patients in the U.S. alone. AG-348 entered Phase I in healthy volunteers in April 2014, and should move into patients by 2015. We believe AG-348 could generate $600MM+ in peak revenue, and is wholly owned by Agios. We expect multiple value-creating clinical readouts to drive stock outperformance over the next 12-18 months.

Upcoming Agios Milestones

Event	Timing
Update on AG-221's Phase I trial in IDH2m liquid tumors (at EHA)	June 12-15, 2014
Begin enrollment in AG-348's multiple ascending dose Phase I trial in healthy volunteers	H2:14
Start of Phase II expansion cohorts for AGI-221 in IDH2m liquid tumors	H2:14
Initial clinical data for AGI-120 in IDH1m tumors	2015
Initial data from for AGI-348's Phase I volunteer trials and natural history study	2015

Source: Cowen and Company

Agios Pharmaceuticals Quarterly P&L Model ($MM)

	Q1:13A	Q2:13A	Q3:13A	Q4:13A	2013A	Q1:14A	Q2:14E	Q3:14E	Q4:14E	2014E
Product Revenue										
Collaboration Revenue	6.3	6.3	6.3	6.7	25.5	8.4	8.6	13.6	9.0	39.6
Total Revenue	**6.3**	**6.3**	**6.3**	**6.7**	**25.5**	**8.4**	**8.6**	**13.6**	**9.0**	**39.6**
COGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R&D	11.5	13.0	14.8	15.3	54.5	17.4	19.0	19.5	20.0	75.9
SG&A	1.9	1.8	2.5	3.7	9.9	3.3	4.2	3.8	4.6	15.9
Total Expenses	**13.3**	**14.8**	**17.3**	**19.0**	**64.4**	**20.7**	**23.2**	**23.3**	**24.6**	**91.8**
Operating Income/Loss	**(7.0)**	**(8.5)**	**(11.1)**	**(12.2)**	**(38.9)**	**(12.3)**	**(14.6)**	**(9.7)**	**(15.6)**	**(52.2)**
Non-Operating Income	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Pre-tax Income/Loss	**(7.0)**	**(8.5)**	**(11.1)**	**(12.2)**	**(38.8)**	**(12.2)**	**(14.6)**	**(9.7)**	**(15.6)**	**(52.1)**
Tax rate (%)	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*
Provision for income taxes	0.2	0.1	0.1	(0.2)	0.2	0.0	0.0	0.0	0.0	0.0
Net Income (Loss) From Operations	**(7.2)**	**(8.6)**	**(11.2)**	**(12.0)**	**(39.1)**	**(12.2)**	**(14.6)**	**(9.7)**	**(15.6)**	**(52.1)**
Cumulative Preferred Stock Dividends	(1.8)	(1.8)	(0.6)							
GAAP EPS	**($0.37)**	**($0.34)**	**($0.49)**	**($0.39)**	**($1.52)**	**($0.39)**	**($0.44)**	**($0.29)**	**($0.45)**	**($1.57)**
Diluted Shares	24.1	25.0	22.7	31.2	25.8	31.4	33.0	33.7	34.7	33.2

Source: Cowen and Company

Agios Pharmaceuticals Annual P&L Model ($MM)

	2013A	2014E	2015E	2016E	2017E	2018E
Product Revenue	0.0	0.0	0.0	0.0	0.0	8.0
Collaboration Revenue	25.5	39.6	50.0	65.0	25.0	25.0
Total Revenue	**25.5**	**39.6**	**50.0**	**65.0**	**25.0**	**33.0**
COGS	0.0	0.0	0.0	0.0	0.0	0.0
R&D	54.5	75.9	81.0	83.0	85.0	86.0
SG&A	9.9	15.9	18.0	20.0	22.0	40.0
Total Expenses	**64.4**	**91.8**	**99.0**	**103.0**	**107.0**	**126.0**
Operating Income/Loss	**(38.9)**	**(52.2)**	**(49.0)**	**(38.0)**	**(82.0)**	**(93.0)**
Non-Operating Income	0.1	0.0	0.0	0.0	0.0	0.0
Pre-tax Income/Loss	**(38.8)**	**(52.1)**	**(49.0)**	**(38.0)**	**(82.0)**	**(93.0)**
Tax rate (%)	*NM*	*NM*	*NM*	*NM*	*NM*	*NM*
Provision for income taxes	0.2	0.0	0.0	0.0	0.0	0.0
Net Income (Loss) From Operations	**(39.1)**	**(52.1)**	**(49.0)**	**(38.0)**	**(82.0)**	**(93.0)**
GAAP EPS	**($1.52)**	**($1.57)**	**($1.40)**	**($1.05)**	**($2.15)**	**($2.20)**
Diluted Shares	25.8	33.2	35.0	36.2	38.2	42.3

Source: Cowen and Company

Valuation Methodology And Risks

Valuation Methodology

Biotechnology:

In calculating our 12-month target price, we employ one or more valuation methodologies, which include a discounted earnings analysis, discounted cash flow analysis, net present value analysis and/or a comparable company analysis. These analyses may or may not require the use of objective measures such as price-to-earnings or price-to-sales multiples as well as subjective measures such as discount rates.

We make investment recommendations on early stage (pre-commercial) biotechnology companies based upon an assessment of their technology, the probability of pipeline success, and the potential market opportunity in the event of success. However, because these companies lack traditional financial metrics, we do not believe there are any good methodologies for assigning a specific target price to such stocks.

Investment Risks

Biotechnology:

There are multiple risks that are inherent with an investment in the biotechnology sector. Beyond systemic risk, there is also clinical, regulatory, and commercial risk. Additionally, biotechnology companies require significant amounts of capital in order to develop their clinical programs. The capital-raising environment is always changing and there is risk that necessary capital to complete development may not be readily available.

Risks To The Price Target

Agios Pharmaceuticals is developing several, currently preclinical, drug candidates in the areas of cancer metabolism and inborn errors of metabolism. All of Agios' drug candidates face clinical and regulatory risk. With the future development path depending on the evolution of clinical data, future revenue forecasts are uncertain. The commercial outlook for Agios' candidates could additionally be altered by safety/efficacy findings, emerging competition, alterations in the medical treatment paradigm, or changes in the pricing environment. Some of Agios' projected market exclusivity depends on patents, which are subject to challenge by generic drugmakers.

Addendum

Stocks Mentioned In Important Disclosures

Ticker	Company Name
AGIO	Agios Pharmaceuticals Inc
MEIP	MEI Pharma

Analyst Certification

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Cowen and Company, LLC and/or its affiliates expect to receive, or intend to seek, compensation for investment banking services in the next 3 months from Agios Pharmaceuticals Inc.

Agios Pharmaceuticals Inc and MEI Pharma is or was in the past 12 months a client of Cowen and Company, LLC; during the past 12 months, Cowen and Company, LLC provided IB services.

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Cowen and Company Rating System effective May 25, 2013

Outperform (1): The stock is expected to achieve a total positive return of at least 15% over the next 12 months

Market Perform (2): The stock is expected to have a total return that falls between the parameters of an Outperform and Underperform over the next 12 months

Underperform (3): Stock is expected to achieve a total negative return of at least 10% over the next 12 months

Assumption: The expected total return calculation includes anticipated dividend yield

Cowen and Company Rating System until May 25, 2013

Outperform (1): Stock expected to outperform the S&P 500

Neutral (2): Stock expected to perform in line with the S&P 500

Underperform (3): Stock expected to underperform the S&P 500

Assumptions: Time horizon is 12 months; S&P 500 is flat over forecast period

Cowen Securities, formerly known as Dahlman Rose & Company, Rating System until May 25, 2013

Buy – The fundamentals/valuations of the subject company are improving and the investment return is expected to be 5 to 15 percentage points higher than the general market return

Sell – The fundamentals/valuations of the subject company are deteriorating and the investment return is expected to be 5 to 15 percentage points lower than the general market return

Hold – The fundamentals/valuations of the subject company are neither improving nor deteriorating and the investment return is expected to be in line with the general market return

Cowen And Company Rating Definitions

Distribution of Ratings/Investment Banking Services (IB) as of 03/31/14

Rating	Count	Ratings Distribution	Count	IB Services/Past 12 Months
Buy (a)	407	57.08%	85	20.88%
Hold (b)	288	40.39%	8	2.78%
Sell (c)	18	2.52%	1	5.56%

(a) Corresponds to "Outperform" rated stocks as defined in Cowen and Company, LLC's rating definitions. (b) Corresponds to "Market Perform" as defined in Cowen and Company, LLC's ratings definitions. (c) Corresponds to "Underperform" as defined in Cowen and Company, LLC's ratings definitions.

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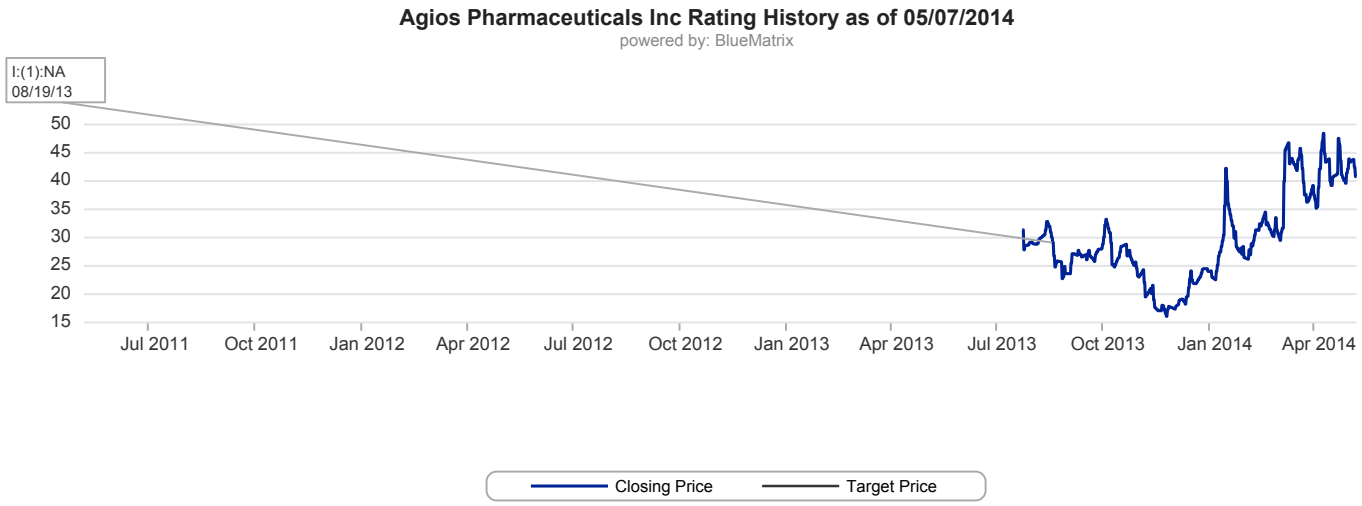

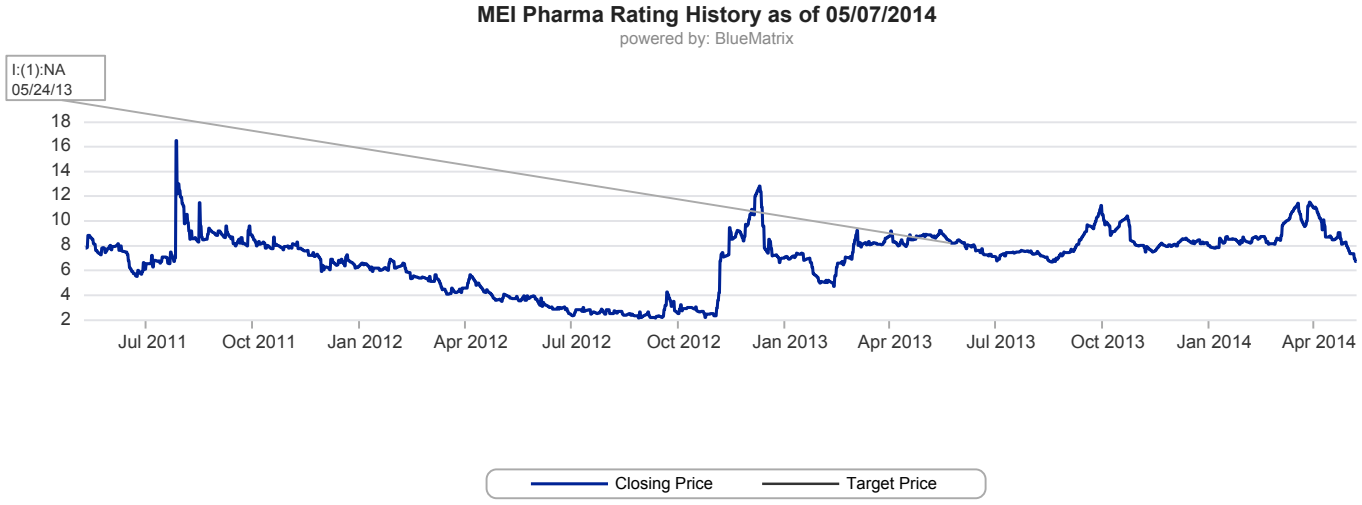

Legend for Price Chart:

I = Initation | 1 = Outperform | 2 = Market Perform | 3 = Underperform | UR = Price Target Under Review | T = Terminated Coverage | $xx = Price Target | NA = Not Available | S=Suspended

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