

Equity Research

March 7, 2014

**Price: \$18.90** (03/6/2014)

**Price Target: \$27.00**

**OUTPERFORM (1)**

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**Key Data**

Symbol	NASDAQ: CMRX
52-Week Range:	\$27.00 - 12.96
Market Cap (MM):	\$499.4
Net Debt (MM):	\$(105.3)
Cash/Share:	\$6.18
Dil. Shares Out (MM):	26.4
Enterprise Value (MM):	\$393.8
ROIC:	NA
ROE (LTM):	NA
BV/Share:	\$4.05
Dividend:	NA

FY (Dec)	2013A	2014E	2015E
<b>Earnings Per Share</b>			
Q1	\$(22.58)	\$(0.35)	-
Prior Q1	-	\$(0.39)	-
Q2	\$(0.91)	\$(0.42)	-
Prior Q2	-	\$(0.40)	-
Q3	\$(0.26)	\$(0.50)	-
Prior Q3	-	\$(0.33)	-
Q4	\$(0.31)	\$(0.58)	-
Prior Q4	\$(0.37)	\$(0.34)	-
Year	\$(1.55)	\$(1.85)	\$(1.75)
Prior Year	\$(1.63)	\$(1.45)	\$(1.20)
P/E	NM	NM	NM
Consensus EPS	\$(1.55)	\$(1.83)	\$(0.62)
Prior Year	\$(2.57)	\$(1.75)	\$(0.97)

Consensus source: Thomson Reuters

**Revenue (MM)**

Year	\$4.4	\$2.5	\$15.5
Prior Year	\$4.7	\$7.5	-
EVS	89.5x	157.5x	25.4x

Earnings Update

# *SUPPRESS Enrollment On Track, New Opportunities To Crystallize During 2014*

## **The Cowen Insight**

Enrollment in brincidofovir's Ph. III trial is on track, with results expected in mid-2015. Chimerix expects to finalize the design of a Ph. III in solid organ patients, and to identify other areas for development, during 2014. We believe that Chimerix is undervalued based just on brincidofovir's potential as a CMV prophylactic in HSCT patients, with other indications creating additional value.

## **Chimerix Remains Well Funded.**

Chimerix reported a Q4:13 net loss of \$8.2MM, or \$0.31 per shares. Chimerix ended 2013 with \$110MM in cash. We have adjusted our ests. to be consistent with current expense run rates.

## **Brincidofovir On Track For 2016 Launch.**

Chimerix remains on schedule to complete enrollment in the Phase III SUPPRESS trial during 2014, and to release results in mid-2015. We continue to be confident that SUPPRESS will hit its primary endpoint of failure to prevent CMV reactivation through week 24. The trial is >87% powered to detect a 50% decrease in CMV reactivation in brincidofovir vs. placebo. In brincidofovir's Phase II '201 trial, 100mg BIW produced a 73% reduction in CMV events. However, there is reason to believe that the reduction will be even greater in Phase III. In Phase II, 50 of the 230 subjects with CMV reactivation had it prior to the first day of brincidofovir dosing. In Phase III brincidofovir can be dosed prior to engraftment, as early as day 1, and therefore few patients should have reactivation prior to dosing. In Phase II, none of the 41 patients on 100mg BIW brincidofovir who were CMV negative at baseline developed CMV PCR of >1,000 copies/mL during the dosing period, compared to 15 of the 47 (32%) of patients in the placebo cohort, a 100% reduction (p<0.001).

## **Finalizing The Design Of A Solid Organ Transplant Phase III.**

Chimerix is in discussions with the FDA and EMA over the structure of a Phase III trial in solid organ transplant, and expects to settle on a design during 2014. While the exact structure will depend on the regulatory discussions, CMRX currently expects to conduct the first solid organ transplant viral preventative study using a design similar to that of the SUPPRESS study, likely in kidney transplant patients.

## **Visibility To Increase On Opportunities Outside Of HSCT.**

Chimerix notes that brincidofovir's compassionate use program has provided a wealth of information on its use to treat a wide range of viral infections, in a variety of patient populations. During 2014 CMRX will mine this database to identify new potential opportunities. Management mentioned three on today's call, JC Virus, glioblastoma (where there have been recent publications establishing a link to CMV) and HPV-related papillomatosis. Interestingly, brincidofovir has been used to treat 8 patients with JC virus, and has cleared the virus from 2.

## At A Glance

### Our Investment Thesis

Our consultants think brincidofovir is safe, well tolerated, and potent, and is consequently likely to succeed in its Phase III SUPPRESS trial. Moreover, they think there is a need for a prophylactic to prevent infection with CMV and other dsDNA viral infections in transplant patients, and therefore expect brincidofovir to be widely adopted once available. We project that brincidofovir will achieve worldwide sales of \$330MM in HSCT alone by 2019, with Chimerix achieving profitability in 2017. We believe that Chimerix is undervalued based just on brincidofovir's potential as a CMV prophylactic in HSCT patients, with no contribution from other indications or other pipeline programs. We expect Chimerix' stock to outperform over the next 12 months as brincidofovir progresses through development.

### Forthcoming Catalysts

- Finalize brincidofovir's Phase III solid organ transplant study design
- Define development programs for brincidofovir outside of HSCT and solid organ transplant
- Present data from brincidofovir's development program at conferences and medical meetings
- Data from SUPPRESS trial of brincidofovir in adult HSCT patients in mid-2015

### Base Case Assumptions

- Brincidofovir is successfully developed for the prevention of CMV reactivation in HSCT patients
- Brincidofovir achieves \$330MM in sales in HSCT patients by 2019
- Use of brincidofovir in other indications does not create significant shareholder value
- Chimerix's other pipeline candidates do not contribute meaningfully to revenue or earnings

### Upside Scenario

- Brincidofovir generates more than \$330MM in revenue in CMV prophylaxis by 2019
- Brincidofovir is successfully developed for other indications, driving revenue well above our estimates
- Chimerix's other pipeline candidates are successfully developed, creating significant shareholder value

### Downside Scenario

- Brincidofovir is not successfully developed for CMV prevention in HSCT patients
- Brincidofovir also fails in the development for other indications
- Chimerix's pipeline does not generate any other viable candidates

### Price Performance



Source: Bloomberg

### Company Description

Chimerix is a biopharmaceutical company focused on the discovery and development of novel antivirals. Chimerix has a propriety lipid technology that has been shown to improve the potency of antivirals, and has produced two clinical stage candidates. Lead candidate brincidofovir is a phospholipid derivative of GILD's cidofovir that can potentially kill a wide range of dsDNA viruses. It has successfully completed a Phase II trial for the prophylaxis against CMV reactivation in hematopoietic stem cell transplant (HSCT) patients. The Phase III SUPPRESS trial began in September 2013, supporting a U.S. launch by 2016. Brincidofovir is also in development for the prevention of viral infection in solid organ transplant patients, and as a bioterrorism measure to prevent smallpox. Behind brincidofovir is CMX157, a phospholipid derivative of GILD's tenofovir that partner Merck is developing for the treatment of HIV.

### Analyst Top Picks

	Ticker	Price (03/6/2014)	Price Target	Rating
BioMarin Pharmaceutical	BMRN	\$77.21	\$95.00	Outperform
Gilead Sciences	GILD	\$79.92	\$95.00	Outperform
Neurocrine Biosciences	NBIX	\$17.02	\$20.00	Outperform

## Investment Thesis

Chimerix is a biopharmaceutical company focused on the discovery and development of novel antivirals. Chimerix has a proprietary lipid technology that has been shown to improve the potency of antivirals, and has produced two clinical stage candidates. Lead candidate brincidofovir (CMX001) is a phospholipid derivative of GILD's cidofovir that can potentially kill a wide range of dsDNA viruses. It has successfully completed a Phase II trial for the prophylaxis against CMV reactivation in hematopoietic stem cell transplant (HSCT) patients. The Phase III SUPPRESS trial in this indication began in September 2013. Results are expected in Mid-2015, supporting a U.S. launch by 2016. Our consultants think brincidofovir is safe, well tolerated, and potent, and is consequently likely to succeed in Phase III. Moreover, they think there is a need for a prophylactic to prevent infection with CMV and other dsDNA viral infections in transplant patients, and therefore expect brincidofovir to be widely adopted once available. We project that brincidofovir will achieve worldwide sales of \$330MM in HSCT alone by 2019, with Chimerix achieving profitability in 2017. Brincidofovir is also in development for the prevention of viral infection in solid organ transplant patients, and as a bioterrorism measure to prevent smallpox. Its activity against a broad spectrum of dsDNA viruses suggests it could have utility in a number of other indications. Behind brincidofovir is CMX157, a phospholipid derivative of GILD's tenofovir that partner Merck is developing for the treatment of HIV. We believe that Chimerix is undervalued based just on brincidofovir's potential as a CMV prophylactic in HSCT patients, with no contribution from other indications or other pipeline programs. We expect Chimerix's stock to outperform over the next 12 months as brincidofovir progresses through development.

### Chimerix Milestones

Event	Timing
Submit pediatric development plan to the FDA	H1:14
Initiate PK trial of brincidofovir pediatric formulation	H1:14
Finalize Phase III solid organ transplant study design	2014
Complete enrollment in brincidofovir's SUPPRESS trial	2014
Data updates from Study 350 of brincidofovir in transplant patients with severe, life threatening dsDNA infections	2014
Begin pivotal trial for brincidofovir in small pox (BARDA funded)	2014
Data from Phase III SUPPRESS trial of brincidofovir as prophylactic against CMV in adult HSCT	Mid 2015

Source: Cowen and Company

### Chimerix Quarterly P&L (\$MM)

	Q1:13A	Q2:13A	Q3:13A	Q4:13A	2013A	Q1:14E	Q2:14E	Q3:14E	Q4:14E	2014E
Brincidofovir	-	-	-	-	-	-	-	-	-	-
CMX-157 Royalty	-	-	-	-	-	-	-	-	-	-
Collaboration and Licensing Revenue	-	-	-	-	-	-	-	-	-	-
Contract And Grant Revenue	1.8	0.8	0.9	0.9	4.4	0.6	0.6	0.6	0.7	2.5
<b>Total Revenue</b>	<b>1.8</b>	<b>0.8</b>	<b>0.9</b>	<b>0.9</b>	<b>4.4</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.7</b>	<b>2.5</b>
COGS	-	-	-	-	-	-	-	-	-	-
<i>Gross Margin</i>										
R&D	6.5	6.3	5.3	6.3	24.4	7.3	9.0	11.0	13.3	40.6
SG&A	1.8	2.2	2.0	2.6	8.6	2.7	2.9	3.1	3.3	12.0
Other										
<b>Operating Expenses</b>	<b>8.3</b>	<b>8.5</b>	<b>7.3</b>	<b>8.9</b>	<b>33.0</b>	<b>10.0</b>	<b>11.9</b>	<b>14.1</b>	<b>16.6</b>	<b>52.6</b>
<b>Operating Income / (Loss)</b>	<b>(6.5)</b>	<b>(7.7)</b>	<b>(6.4)</b>	<b>(8.0)</b>	<b>(28.6)</b>	<b>(9.4)</b>	<b>(11.3)</b>	<b>(13.5)</b>	<b>(15.9)</b>	<b>(50.1)</b>
Interest Income, net	(0.4)	(0.4)	(0.3)	(0.2)	(1.2)	0.2	0.1	0.1	0.1	0.5
Other Income	(2.2)	(4.4)								
<b>Pretax net income</b>	<b>(9.1)</b>	<b>(12.5)</b>	<b>(6.7)</b>	<b>(8.2)</b>	<b>(29.9)</b>	<b>(9.2)</b>	<b>(11.2)</b>	<b>(13.4)</b>	<b>(15.8)</b>	<b>(49.6)</b>
Accretion of redeemable convertible preferred stock	(25.5)	(8.6)		(0.0)						
Taxes	-	-	-	-	-	-	-	-	-	-
<i>Tax Rate</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>
<b>GAAP Net Income</b>	<b>(34.6)</b>	<b>(21.0)</b>	<b>(6.7)</b>	<b>(8.2)</b>	<b>(29.9)</b>	<b>(9.2)</b>	<b>(11.2)</b>	<b>(13.4)</b>	<b>(15.8)</b>	<b>(49.6)</b>
<b>GAAP EPS</b>	<b>\$ (22.58)</b>	<b>\$ (0.91)</b>	<b>\$ (0.26)</b>	<b>\$ (0.31)</b>	<b>\$ (1.55)</b>	<b>\$ (0.35)</b>	<b>\$ (0.42)</b>	<b>\$ (0.50)</b>	<b>\$ (0.58)</b>	<b>\$ (1.85)</b>
<b>Diluted Shares Outstanding (MM)</b>	<b>1.5</b>	<b>23.1</b>	<b>25.9</b>	<b>26.4</b>	<b>19.2</b>	<b>26.5</b>	<b>26.6</b>	<b>27.0</b>	<b>27.3</b>	<b>26.9</b>

Source: Cowen and Company

### Chimerix Annual P&L (\$MM)

	2013A	2014E	2015E	2016E	2017E	2018E	2019E
Brincidofovir	-	-	-	45.0	135.0	240.0	330.0
CMX-157 Royalty	-	-	-	-	-	-	-
Collaboration and Licensing Revenue	-	-	15.5	20.0	20.0	20.0	20.0
Contract And Grant Revenue	4.4	2.5	-	-	-	-	-
<b>Total Revenue</b>	<b>4.4</b>	<b>2.5</b>	<b>15.5</b>	<b>65.0</b>	<b>155.0</b>	<b>260.0</b>	<b>350.0</b>
COGS	-	-	1.6	3.6	10.8	19.2	26.4
<i>Gross Margin</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>
R&D	24.4	40.6	54.5	65.0	75.8	84.7	95.3
SG&A	8.6	12.0	13.0	28.0	34.0	40.0	45.0
Other	-	-	-	-	-	-	-
<b>Operating Expenses</b>	<b>33.0</b>	<b>52.6</b>	<b>69.1</b>	<b>96.6</b>	<b>120.6</b>	<b>143.9</b>	<b>166.7</b>
<b>Operating Income / (Loss)</b>	<b>(28.6)</b>	<b>(50.1)</b>	<b>(53.6)</b>	<b>(31.6)</b>	<b>34.4</b>	<b>116.1</b>	<b>183.3</b>
Interest Income, net	(1.2)	0.5	1.0	1.0	2.0	6.0	6.0
Other Income							
<b>Pretax net income</b>	<b>(29.9)</b>	<b>(49.6)</b>	<b>(52.6)</b>	<b>(30.6)</b>	<b>36.4</b>	<b>122.1</b>	<b>189.3</b>
Accretion of redeemable convertible preferred stock							
Taxes	-	-	-	-	-	-	-
<i>Tax Rate</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>
<b>GAAP Net Income</b>	<b>(29.9)</b>	<b>(49.6)</b>	<b>(52.6)</b>	<b>(30.6)</b>	<b>36.4</b>	<b>122.1</b>	<b>189.3</b>
<b>GAAP EPS</b>	<b>(1.55)</b>	<b>(1.85)</b>	<b>(1.75)</b>	<b>(1.00)</b>	<b>1.05</b>	<b>3.40</b>	<b>5.10</b>
<b>Diluted Shares Outstanding (MM)</b>	<b>19.2</b>	<b>26.9</b>	<b>30.0</b>	<b>30.5</b>	<b>34.8</b>	<b>35.9</b>	<b>37.1</b>

Source: Cowen and Company

## Chimerix DCF Analysis

Financial Year End	12/31/2012	Chimerix: DCF Valuation											
Valuation Date	3/7/2014												
Discount Rate	10.0%												
Terminal Growth Rate	-20.0%												
SMM		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Brincidofovir		0	0	45	135	240	330	347	364	382	401	421	442
Growth (%)					20%	10%	5%	5%	5%	5%	5%	5%	5%
CMX-157 Royalty		0	0	0	0	0	0	0	0	0	0	0	0
Growth (%)													
Collaboration and Licensing Revenue		0	16	20	20	20	20	20	20	20	20	20	20
Growth (%)													
Contract And Grant Revenue		3	0	0	0	0	0	0	0	0	0	0	0
Growth (%)													
Total Revenues		3	16	65	155	260	350	367	384	402	421	441	462
Growth (%)					138%	68%	35%	5%	5%	5%	5%	5%	5%
COGS		0	2	4	11	19	26	30	31	33	34	36	37
COGS as a % of sales				8%	8%	8%	8%	9%	9%	9%	8%	8%	8%
R&D		41	55	65	76	85	95	55	50	44	46	44	46
R&D as a % of Revenues				100%	49%	33%	27%	15%	13%	11%	11%	10%	10%
SG&A		12	13	28	34	40	45	51	54	48	51	53	55
SG&A as a % of Revenues				43%	22%	15%	13%	14%	14%	12%	12%	12%	12%
Operating Income		-50	-54	-32	34	116	183	230	249	277	290	308	323
Tax		0	0	0	0	0	0	0	75	83	87	93	97
Tax rate		0%	0%	0%	0%	0%	0%	0%	30%	30%	30%	30%	30%
NOL/ Tax Assets Utilized													
Tax rate													
Taxes Paid		0	0	0	0	0	0	0	75	83	87	93	97
Approx Free Cash Flow		(50)	(54)	(32)	34	116	183	230	174	194	203	216	226
Years		0.81	1.81	2.82	3.82	4.81	5.81	6.82	7.82	8.81	9.81	10.82	11.81
Discount Factor		0.93	0.84	0.76	0.70	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32
NPV of Cash flows		(46)	(45)	(24)	24	73	105	120	83	84	80	77	73
Terminal Value Calculation													
Final year FCF	0												
Perpetual Growth Rate	-20.0%												
Terminal Value	0												
Discount Factor	0												
Present Value of Terminal Value	0												
Present Value of Cash Flows	604												
Enterprise Value	604												
Add: Net cash	110												
Market Value	714												
Fully Diluted Shares Outstanding	26.4												
Value per Fully Diluted Share	\$27.03												

Source: Cowen and Company

## *Valuation Methodology And Risks*

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### **Valuation Methodology**

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#### **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**

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#### **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**

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Much of Chimerix valuation rests on the potential of its developmental-stage candidates, most specifically brincidofovir and CMX157. Projecting future sales for any product is difficult, and this is particularly the case for candidates that are still in clinical development. Chimerix' stock could be impacted by changes in the regulatory, commercial, or competitive environment for any. Moreover, a number of antiviral candidates have failed during clinical trials, and both CMV and HIV are an extremely competitive spaces. There can be no assurance that any of Chimerix candidates, even if successfully developed, will generate meaningful revenue. Therefore Chimerix product portfolio must be considered high risk.

# Addendum

## Stocks Mentioned In Important Disclosures

Ticker	Company Name
BMRN	BioMarin Pharmaceutical
CMRX	Chimerix
GILD	Gilead Sciences
NBIX	Neurocrine Biosciences

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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 Neurocrine Biosciences.

Chimerix and Neurocrine Biosciences 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 DEFINITIONS

#### 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 12/31/13

Rating	Count	Ratings Distribution	Count	IB Services/Past 12 Months
Buy (a)	415	59.20%	68	16.39%
Hold (b)	270	38.52%	4	1.48%
Sell (c)	16	2.28%	1	6.25%

(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.

Note: "Buy", "Hold" and "Sell" are not terms that Cowen and Company, LLC uses in its ratings system and should not be construed as investment options. Rather, these ratings terms are used illustratively to comply with FINRA and NYSE regulations.

### Chimerix Rating History as of 03/06/2014

powered by: BlueMatrix



### BioMarin Pharmaceutical Rating History as of 03/06/2014

powered by: BlueMatrix





### Gilead Sciences Rating History as of 03/06/2014

powered by: BlueMatrix



### Neurocrine Biosciences Rating History as of 03/06/2014

powered by: BlueMatrix



#### Legend for Price Chart:

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

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