

Concert Pharmaceuticals, Inc. (CNCE)

CNCE Reports 4Q14 and FY14 Earnings Results

MARKET DATA	
Price	\$14.54
52-Week Range:	\$7.12 - \$15.84
Shares Out. (M):	17.9
Market Cap (\$M):	\$260.3
Average Daily Vol. (000):	98.0
Cash (M):	\$79
Cash/Share:	\$1.31
Enterprise Value (M):	\$52
Float (M):	16.0
LT Debt (M):	\$5
Source: Thomson Reuters and JMP Securities LLC	

FY DEC		2013A	2014A	2015E
Revenue (\$M)) 1Q		\$1.6	\$1.2
	2Q	\$24.0	\$1.2	\$4.4
	3Q	\$24.0	\$4.4	\$1.3
	4Q	\$1.4	\$1.3	\$8.6
	FY	\$25.4	\$8.6	\$14.0
EPS	1Q		(\$0.76)	(\$0.57)
	2Q	(\$0.01)	(\$0.45)	(\$0.58)
	3Q	(\$0.01)	(\$0.43)	(\$0.40)
	4Q	(\$4.66)	(\$0.49)	(\$0.26)
	FY	(\$4.99)	(\$2.00)	(\$1.67)
Previou	s FY	NC	(\$1.99)	(\$2.42)
Source: Company	reports ar	nd JMP Securities LI	LC	



MARKET OUTPERFORM | Price: \$14.54 | Target Price: \$24.00

INVESTMENT HIGHLIGHTS

Concert Pharmaceuticals detailed 4Q14 and FY14 earnings results and pipeline progress; reiterate our Market Outperform rating and \$24 price target, based on DCF and SOTP valuation methodologies. During the call, CNCE announced updates on the progress of its pipeline with its three ongoing collaborators (CELG, MO, \$133; JAZZ, MO, Livnat; AVNR/Otsuka, NC) which, in our view, are a more relevant valuation metric than earnings. CNCE reported a FY14 net loss of \$32MM or EPS of (\$2.00), in line with the JMP estimate of (\$1.99). Total operating expense was \$40MM, comparable to our \$41.62MM estimate, which was primarily due to expenses associated with the development of CTP-354, JZP-386 and CTP-730. CNCE finished the quarter with \$79.2MM in cash, cash equivalents and short-term investments, providing sufficient cash runway into 2016. A summary of 4Q14 and FY14 actual results versus JMP estimates is shown in Figure 2, as well as changes to our model based on our expectations regarding operations costs (Figure 3).

Slower pace than anticipated, but pipeline progress continues. Chief among the list of drivers for shareholder value is the continued advancement of AVP-786, partnered with AVNR, in the treatment of agitation in patients with Alzheimer's disease. As a reminder, Otsuka Pharmaceuticals, maker of the schizophrenia and depression drug Abilify, recently acquired AVNR. Importantly, since the acquisition, no licensing changes have been implemented. Per the original agreement, CNCE may receive \$2MM in milestone payments if AVP-786 moves into a Phase III trial. To that end, CNCE's partner is expected to meet with the FDA to discuss its potential advancement into a registrational study. Presently, AVP-786 is also in a Phase II trial for major depressive disorder (MDD). We remind investors that the company may be able to strategically steer AVP-786 into other indications. Also expected in 2015 are data from the second Phase I dosing trial of JZP-386 in the treatment of narcolepsy, partnered with JAZZ, in 2Q15. Collaborating with partner CELG, CNCE initiated a Phase I trial in inflammatory disease, which the company anticipates completing this year. Upon achieving this milestone, CNCE will realize \$8MM in payments from CELG. Although some were disappointed in the lack of greater clarity on the timing of the completion of the Special Protocol Assessment (SPA) for CTP-499 for diabetic neuropathy, CNCE expects to complete the molecule's registration pathway sometime before year-end 2015.

New candidate tries to take Kalydeco to a new level. CNCE announced a new clinical candidate it is pursuing: a deuterium-modified ivacaftor for the treatment of genetic disease cystic fibrosis (CF). Recall that Kalydeco (ivacaftor; VRTX, MO, Bayko) is currently approved for the treatment of CF in patients with the following mutations in the CFTR gene: G551D, G1244E, G1349D, G178R, G551S, S1251N, S1255P, S549N,

Michael G. King, Jr. mking@jmpsecurities.com (212) 906-3520



or S549R. While the two analogs (to define the one to advance) that CNCE is expecting to evaluate this year may exhibit greater stability and greater half-life than the currently approved ivacaftor, we currently ascribe no value to the program for the time being.

Further development of CTP-345 delayed until 2016. While the company did not disclose the findings of the study it obtained in January, following a three-month non-clinical investigation into the species-specific adverse events observed earlier in 3Q14 with CTP-345, CNCE did confirm that they were only seen in only one of two species studied. However, out of an abundance of caution, the company fully informed the FDA in 2014 of its findings, and delayed moving ahead to Phase II studies (as a treatment for spasticity). Further, the company reminded investors that the toxicology results seen with the single species may not translate into humans. Going forward, CNCE plans to conduct an additional non-clinical evaluation before advancing the development of CTP-345. We remain cautiously optimistic of the CTP-345 program.

Despite the CTP-354 delay, we continue to see significant upside potential for this deuterated drug company. We remain bullish on Concert Pharmaceuticals shares seeing several opportunities for growth over the next several years in addition to CTP-499 including: AVP-786, JZP-386, CTP-730, CTP-354, and a newly announced clinical candidate for CF. In our opinion, the company's DCE Platform® has all the requisite ingredients to allow CNCE to become one of the leading developers of unique, deuterated-therapeutic compounds.

FIGURE 1. Upcoming Milestones

Timing	Drug	Milestones
2Q15	JZP-386	Annouce data from Phase I trial in normal volunteers (narcolepsy)
1H15	AVP-786	Conduct end of Phase 2 FDA meeting
1H15	deuterated modified ivacaftor	Initiate clinical testing
1H15	CTP-354	Release results of non-clinical evaluation (further tox studies)
2015	AVP-786	Potential to initiate Phase 3 Alzheimer's Agitation study
2015	CTP-499	Potential for SPA
2015	CTP-730	Completion of Phase I clinical program (anti-inflammation)

Source: JMP Securities LLC and Company Reports

February 27, 2015 2

Concert Pharmaceuticals (CNCE)		4Q14 Results		FY14 Results					
Abridged Income Statement (\$ MM)	JMP Estimate	Actual	Variance (JMP vs. Actual)	JMP Estimate	Actual	Variance (JMP vs. Actual)			
Total Revenues	-	1.31		7.27	8.58				
License revenue	-	1.31		5.27	6.58				
Milestone revenue	-	-		2.00	2.00				
Operating Expenses	11.50	10.06	(2.45)	41.62	39.17	(2.4)			
Research and development	9.00	24.19	(2.43)	29.91	27.47	(2.4)			
General and administrative	2.50	7.27	(0.01)	11.71	11.70	(0.0)			
Operating income (loss)	(11.50)	(8.75)	3.76	(34.35)	(30.60)	3.8			
Other income (expense)	0.00	(1.83)	0.00	0.00	(1.10)	(1.10)			
Pretax income (loss)	(11.50)	(8.75)	3.76	(34.35)	(31.70)				
Net income (loss)	(9.50)	(20.83)	3.57	(35.21)	(31.64)	3.57			
EPS Calculations									
Basic EPS	\$ (0.54)	\$ (1.82)	\$ (1.29)	\$ (1.99)	\$ (2.00)	\$ (0.01)			
Diluted EPS	\$ (0.54)	\$ (1.82)	\$ (1.29)	\$ (1.99)	\$ (2.00)	\$ (0.01)			
Basic shares outstanding	17.724	11.210	(1.881)	17.681	15.842	(1.839)			
Diluted shares outstanding	17.724	11.210	(1.881)	17.681	15.842	(1.839)			

Source: JMP Securities LLC and Company Reports

FIGURE 3. Changes to Our Model

Concert Pharmaceuticals (CNCE)	4Q ²	4Q14E FY 2014E FY 2015E FY 20					016E	
(\$ MM)	Old	New	Old	New	Old	New	Old	New
License revenue	2.8	1.3	2.8	6.6	0.0	0.0	0.0	0.0
Milestone revenue Other	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
Total Revenues	4.8	0.0	4.8	4.85	0.0	4.85	0.0	-
cogs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross Profit	-	1.3	4.85	8.58	2.00	14.00	2.00	2.00
Operating Expenses	12.5	10.1	41.1	39.2	50.3	47.8	63.5	60.1
Research and development	9.5	7.1	30.3	27.5	37.9	34.3	49.3	44.6
General and administrative	3.0	3.0	10.8	11.7	12.4	15.5	14.2	15.5
Operating income (loss)	(12.5)	(8.7)	(36.2)	(30.6)	(48.3)	(33.8)	(61.5)	(58.1)
Other income (expense)	0.0	(0.2)	0.0	(1.10)	0.0	-	0.0	-
Interest income	0.0	0.0	0.0	(1.10)	0.0	-	0.0	-
Pretax income	(12.5)	(8.9)	(36.2)	(31.7)	(48.3)	(33.8)	(61.5)	(58.1)
Net income	(12.5)	(8.9)	(36.9)	(31.7)	(70.0)	(33.8)	(61.5)	(58.1)
Basic EPS	(\$0.70)		(\$2.09)		(\$2.39)		(\$2.71)	•
Diluted EPS	(\$0.70)	\$ (0.49)	(\$2.09)	\$ (2.00)	(\$2.39)	\$ (1.67)	(\$2.71)	\$ (2.56)
Basic shares outstanding	17.89	18.27	17.68	15.84	20.22	20.22	22.71	22.71
Diluted shares outstanding	17.89	18.27	17.68	15.84	20.22	20.22	22.71	22.71

Source: JMP Securities LLC and Company Reports

FIGURE 4. Income Statement

Concert Pharmaceuticals (CNCE)	1Q14A	2Q14A 3	3Q14A	4Q14A	2014A	1Q15E	2Q15E	3Q15E	4Q15E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Income Statement (\$MM)	1Q14A		3Q14A	4Q14A	2014A	1Q15E		3Q15E	4Q15E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Product Sales and Royalties:																				
CTP-354										8.0										
US Sales												_	_	48.7	218.7	351.9	471.8	614.0	701.5	731.8
ROW Royalties												_	_	-	-	-	-	-	-	-
CTP-499																				
US Sales												_	_	7.0	24.7	57.0	108.7	148.1	154.1	160.3
ROW Royalties												_	_	-	5.9	23.5	57.1	102.7	118.9	133.9
JZP-386															0.0	20.0	07.1	102.7	110.5	100.0
Royalties from Jazz												_	1.8	7.6	25.4	46.9	81.0	117.3	142.6	147.7
Milestone Payments										4.0		8.0	35.0	7.0	20.4	40.3	01.0	70.0	142.0	147.7
AVP-786										4.0		0.0	33.0					70.0		
Royalties from Avanir										2.0				4.3	16.4	45.8	89.6	134.2	146.8	161.5
Milestone Payments										2.0	2.0		-	37.0	43.0	45.6	89.6	134.2	125.0	101.5
Milestone Payments											2.0			37.0	43.0				125.0	
Total Product Sales and Royalties	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	2.0	8.0	36.8	104.6	334.1	525.0	808.2	1,186.3	1,388.8	1,335.3
License and research and development revenue	1.6	1.2	2.4	1.31	6.6	1.0	1.0	1.0	1.0											
License and research and development revenue Milestone Revenue	0.0	1.2	2.4	0.0	2.0	1.0	1.0	4.0	1.0	,						l				
Total Revenue	1.6	1.2	4.4	1.3	8.6	1.0	1.0	5.0	7.0	14.0	2.0	8.0	36.8	104.6	334.1	525.0	808.2	1,186.3	1,388.8	1,335.3
Total Revenue	1.0	1.2	4.4	1.3	0.0	1.0	1.0	5.0	7.0	14.0	2.0	8.0	30.0	104.6	334.1	525.0	000.2	1,100.3	1,300.0	1,335.3
Cost of Goods Sold											0.0	0.0	0.0	3.9	17.5	28.2	37.7	49.1	56.1	58.5
Gross Profit	1.6	1.2	4.4	1.3	8.6	1.0	1.0	5.0	7.0	14.0	2.0	8.0	36.8	100.7	316.6	496.9	770.5	1,137.2	1,332.7	1,276.8
Operating Expenses:			_																	
Research and Development	5.6	6.2	8.6	7.1	27.5	8.0	8.0	8.5	8.5	34.3	44.6	51.3	57.5	62.1	67.1	72.4	78.2	82.1	88.7	95.8
General and administrative	2.5	2.7	3.5		11.7	3.5	3.5	3.7	3.7	13.5	15.5	23.2	29.0	33.4	36.0	38.9	42.0	45.4	49.0	51.5
Total operating expenses	8.1	9.0	12.0	10.1	39.2	11.5	11.5	12.2	12.2	47.8	60.1	74.6	86.5	95.5	103.1	111.4	120.3	127.5	137.7	147.3
Operating income (loss)	(6.5)	(7.7)	(7.6)	(8.7)	(30.6)	(10.5)	(10.5)	(7.2)	(5.2)	(33.8)	(58.1)	(66.6)	(49.8)	5.3	213.5	385.5	650.2	1,009.6	1,195.0	1,129.5
,	` ′				, ,	, ,			` ′	` ′	` ′	, ,	` ′							
Other income (expense):																				
Investment income	0.0	0.0																		
Interest expense	(0.4)	-0.3	(0.2)	0.0	-1.1															
Payment to GSK													(2.5)							
Total other income, net	(0.4)	(0.3)	(0.2)	(0.2)	(1.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other comprehensive loss:																				
Unrealized loss on investments	0.0																			
Change in fair value of preferred stock warrant liability																				
Foreign currency transaction gain (loss)																				
Pretax income (loss)	(6.9)	(8.0)	(7.8)	(8.9)	(31.7)	(10.5)	(10.5)	(7.2)	(5.2)	(33.8)	(58.1)	(66.6)	(49.8)	5.3	213.5	385.5	650.2	1,009.6	1,195.0	1,129.5
Income tax benefit (provision)					0.0					0.0	0.0	0.0	0.0	0.0	(32.0)	(77.1)	(162.6)	(302.9)	(418.2)	(395.3)
Tax Rate					0%					0%	0%	0%	0%	0%	15%	20%	25%	30%	35%	35%
Comprehensive income (loss)	(6.9)	(8.0)	(7.8)	(8.9)	(31.7)	(10.5)	(10.5)	(7.2)	(5.2)	(33.8)	(58.1)	(66.6)	(49.8)	5.3	181.5	308.4	487.7	706.7	776.7	734.2
Accretion of redeemable convertible preferred stock	0.06				-0.06															
Net income (loss) attributable to common stockholders	(6.9)	(8.0)	(7.8)	(8.9)	(31.6)	(10.5)	(10.5)	(7.2)	(5.2)	(33.8)	(58.1)	(66.6)	(49.8)	5.3	181.5	308.4	487.7	706.7	776.7	734.2
met income (ioss) attributable to common stockholders	(6.9)	(0.0)	(7.0)	(0.9)	(31.6)	(10.5)	(10.5)	(1.2)	(5.2)	(33.8)	(56.1)	(0.00)	(49.8)	5.3	101.5	300.4	407.7	700.7	110.1	134.2
Basic EPS to common shareholders	\$ (0.76)	\$ (0.45) \$	(0.43)	\$ (0.49)	\$ (2.00)	\$ (0.57)	\$ (0.58)	\$ (0.40)	\$ (0.26)	\$ (1.67)	\$ (2.56)	\$ (2.93)	\$ (1.98)	\$ 0.1 <u>9</u>	\$ 6.5 <u>6</u>	\$ 10.24	\$ 14.95	\$ 21.68	\$ 23.84	\$ 22.54
Diluted EPS to common shareholders	\$ (0.76)	\$ (0.45) \$	(0.43)				 					\$ (2.93)				\$ 10.28		\$ 21.77		
	,	. \/ +	\/	. (/																
Basic shares outstanding	9.2	17.8	18.1	18.3	15.8	18.5	18.2	18.0	20.4	20.2	22.7	22.7	25.2	27.7	27.6	30.1	32.6	32.6	32.6	32.6
Diluted shares outstanding	9.2	17.8	18.1	18.3	15.8	18.5	18.2	18.0	20.4	20.2	22.7	22.7	25.2	27.5	27.5	30.0	32.5	32.5	32.4	32.4
% change in diluted shares outstanding										27.6%	12.3%	-0.1%	11.0%	9.3%	-0.1%	9.0%	8.3%	-0.1%	-0.1%	-0.1%
	•				•	•														

Source: JMP Securities LLC and Company Reports



Company Description

Concert Pharmaceuticals is a clinical stage biopharmaceutical company seeking to discover and develop novel small molecule drugs through the improvement of existing drugs and clinical candidates, via deuterium substitution. Deuterium substitution can lead to drugs with superior pharmacokinetic or metabolic properties, improved clinical safety, tolerability, and/or efficacy. Deuterated analogs of approved drugs may also be able to enjoy expedited pathways to FDA approval. The firm currently has a trio of clinical-stage product candidates, including CTP-354, for spasticity associated with multiple sclerosis, CTP-499 for diabetic kidney disease, and AVP-786 for neurologic and psychiatric disorders, through a collaboration with Avanir Pharmaceuticals. The firm is also in ongoing collaboration with Celgene Corporation for deuterated compounds, including CTP-730 for inflammatory diseases, and with Jazz Pharmaceuticals for JZP-386, the active ingredient in Xyrem, which is in pre-clinical development for narcolepsy.

Investment Risks

Clinical risk. Products undergoing clinical trials may have serious safety concerns, lack efficacy, or fail to demonstrate statistical significance, any of which would preclude them from continuing clinical development and eventual commercialization. If the company's Deuterated Chemical Entity (DCE) Platform® technology is not proven, there will likely be downside to the share price as well as risk to the viability of the company. In addition, CNCE has not yet demonstrated an ability to successfully conduct a large-scale pivotal clinical trial, obtain marketing approvals, manufacture a commercial scale product, or to conduct the sales and marketing activities necessary for successful product commercialization.

Collaboration risk. CNCE will depend upon collaborations with third parties for the development and commercialization of some of the company's product candidates and expects to continue to do so in the future. CNCE's business model relies on making use of its DCE platform to partner with Pharmaceutical and Biotechnology companies to improve existing drug candidates. CNCE's prospects with respect to those product candidates will depend in significant part on the success of those collaborations.

Manufacturing risk. CNCE is a clinical-stage biopharmaceutical company applying its extensive knowledge of deuterium chemistry to discover and develop novel small molecule drugs. Because there are limited sources of deuterium, CNCE and its collaborators are exposed to a number of risks and uncertainties associated with the company's deuterium supply. In particular, manufacturing processes for many drug candidates, including those for CTP-499 and certain others, are projected to require large quantities of deuterium for late-stage clinical trials and for commercialization. Consequently, any adverse impact on CNCE's ability to obtain deuterium oxide could have a significant impact on the company's ability to develop or commercialize product candidates. Similarly, CNCE's collaborators will also need to obtain supplies of deuterium and will be subject to risks and requirements in connection with sourcing deuterium similar to the ones the company faces.

Intellectual property risk. As of December 31, 2013, CNCE held 100 issued patents worldwide, including 50 issued patents in the United States. CNCE's patents and patent applications for its lead programs are set to expire between 2028 and 2034. The company may be sued by a competitor on patent infringement or have to undergo litigation that would incur substantial fees. The company could lose a case, which would make it susceptible to generic risk.

Financial risk. Concert Pharmaceuticals currently derives revenue from research and development funding and from license or collaboration agreements. The company is not yet profitable and has a history of operating losses that are expected to continue in the near future. Developing pharmaceutical products, including conducting pre-clinical studies and clinical trials, is a time-consuming, expensive, and uncertain process that takes years to complete. CNCE needs to continue financing clinical trials through to completion and it may be unable to secure additional funding, forcing it to delay, reduce, or eliminate product development programs or commercialization efforts. The company has incurred significant losses since its inception and should expect losses to occur for the next several years.

Competitive risk. CNCE faces competition from marketers of other treatments for the indications that it seeks to develop drugs for, including major pharmaceutical firms and biotech firms. The firm's products will also have to compete with existing treatments that have already become generically available (e.g., CTP-354 will have to compete with other spasticity drugs, such as baclofen, tizanidine, diazepam, and dantrolene).

Regulatory risk. CNCE or its collaborators, may, in some instances, be able to secure clearances from the FDA or comparable foreign regulatory authorities to use expedited development pathways. If it is unable to obtain such clearances, CNCE or its collaborators may be required to conduct additional pre-clinical studies or clinical trials beyond those contemplated, which could increase the expense of obtaining, and delay the receipt of, necessary marketing approvals.

February 27, 2015 6



JMP FACTS AND DISCLOSURES

Analyst Certification:

The research analyst(s) who prepared this report does/do hereby certify that the views presented in this report are in accordance with my/our personal views on the securities and issuers discussed in this report. As mandated by SEC Regulation AC no part of my/our compensation was, is or will be directly or indirectly related to the specific views or recommendations expressed herein. This certification is made under the obligations set forth in SEC Regulation AC. Any other person or entity may not use it for any other purpose. This certification is made based on my/our analysis on the date of this report's publication. I/We assume no obligation to update this certification to reflect any facts, circumstances or events that may subsequently come to my/our attention. Signed Michael G. King

JMP Securities Disclosures:

JMP Securities currently makes a market in the securities of Concert Pharmaceuticals, Inc., Avanir Pharmaceuticals, Inc., Celgene Corporation, Jazz Pharmaceuticals, Inc. and Vertex Pharmaceuticals Incorporated

JMP Securities was manager or co-manager of a public offering of securities for Avanir Pharmaceuticals, Inc. (AVNR) in the past 12 months, and received compensation for doing so.

JMP Securities expects to receive OR intends to seek compensation for investment banking services from Concert Pharmaceuticals, Inc., Avanir Pharmaceuticals, Inc. and Jazz Pharmaceuticals, Inc. in the next 3 months.

JMP Securities Investment Opinion Definitions:

Market Outperform (MO): JMP Securities expects the stock price to outperform relevant market indices over the next 12 months.

Market Perform (MP): JMP Securities expects the stock price to perform in line with relevant market indices over the next 12 months.

Market Underperform (MU): JMP Securities expects the stock price to underperform relevant market indices over the next 12 months.

JMP Securities Research Ratings and Investment Banking Services: (as of February 27, 2015)

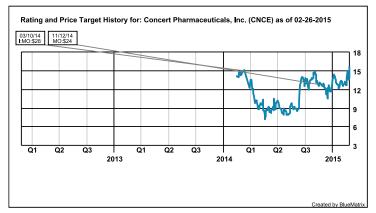
JMP Rating	Regulatory Equivalent	# Co's Under Coverage	% of Total	Regulatory Equivalent	# Co's Under Coverage	% of Total	# Co's Receiving IB Services in Past 12 Months	% of Co's With This Rating
MARKET OUTPERFORM	Buy	282	62.95%	Buy	282	62.95%	89	31.56%
MARKET PERFORM	Hold	155	34.60%	Hold	155	34.60%	22	14.19%
MARKET UNDERPERFORM	Sell	8	1.79%	Sell	8	1.79%	0	0%
COVERAGE IN TRANSITION		1	0.22%		1	0.22%	0	0%
TOTAL:		448	100%		448	100%	113	25.22%

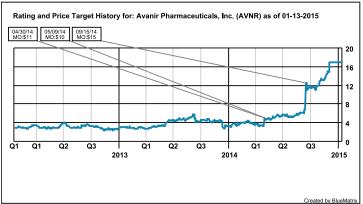
Stock Price Chart of Rating and Target Price Changes:

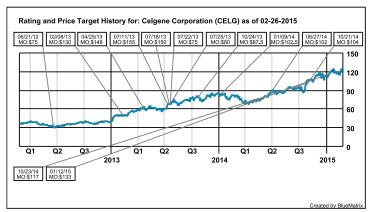
Note: First annotation denotes initiation of coverage or 3 years, whichever is shorter. If no target price is listed, then the target price is N/A. In accordance with NASD Rule 2711, the chart(s) below reflect(s) price range and any changes to the rating or price target as of the end of the most recent calendar guarter. The action reflected in this note is not annotated in the stock price chart. Source: JMP Securities.

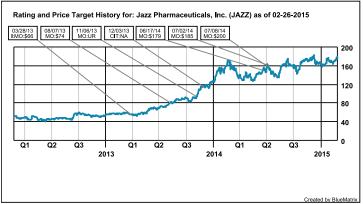
February 27, 2015 7

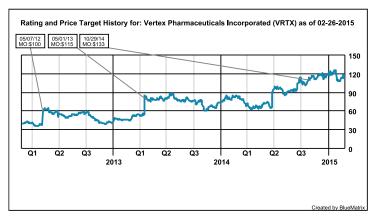












Concert Pharmaceuticals, Inc. (CNCE)



JMP Disclaimer:

JMP Securities LLC (the "Firm") compensates research analysts, like other Firm employees, based on the Firm's profitability, which includes revenues from the Firm's institutional sales, trading, and investment banking departments as well as on the guality of the services and activities performed that are intended to benefit the Firm's institutional clients. These data have been prepared by JMP Securities LLC for informational purposes only and are based on information available to the public from sources that we believe to be reliable, but we do not guarantee their accuracy or completeness. Any opinions and projections expressed herein reflect our judgment at this date and are subject to change without notice. These data are neither intended nor should be considered as an offer to sell or a solicitation or a basis for any contract for the purchase of any security or other financial product. JMP Securities LLC, its affiliates, JMP Group LLC, Harvest Capital Strategies LLC, and their respective partners, directors, officers, and associates may have a long or short position in, may act as a market maker for, or may purchase or sell a position in the securities mentioned herein. JMP Securities LLC or its affiliates may be performing, have performed, or seek to perform investment banking, advisory, or other services and may have acted as manager or co-manager for a public offering of securities for any company mentioned herein. The reader should assume that JMP Securities LLC will solicit business from the company covered in this report. Members of our Sales and Trading Department provide oral and/or written market opinions and trading strategies to our clients that reflect their personal opinions about stocks that are the subject of the firm's research reports. Our research analysts discuss trading strategies with clients that sometimes reflect short-term expectations for the price of the securities that are the subject of research reports. These trading strategies are distinct from the analysts' fundamental rating for the stock, which is based upon the analysts' view compared to other stocks under coverage for the relevant time period. © Copyright 2015. All rights reserved by JMP Securities LLC. JMP Securities LLC is a member of FINRA, NASDAQ, and SIPC.



Jeffrey H. Spurr Director of Research (415) 835-3903

RESEARCH PROFESSIONALS

FINANCIAL SERVICES

Alternative Asset Managers		Medical Devices & Supplies	
Devin Ryan	(212) 906-3578	David Turkaly	(212) 906-3563
Brian McKenna	(212) 906-3545	John Gillings	(212) 906-3564
Brian Wellerina	(212) 300-3343	oom omingo	(212) 000 0004
Commercial & Specialty Finance		Specialty Pharmaceuticals	
Christopher York	(415) 835-8965	Oren G. Livnat. CFA	(212) 906-3566
Hannah Kim, CFA	(415) 835-8962	Nazibur Rahman	(212) 906-3519
Halliali Killi, CFA	(413) 633-6962	Nazibui Naiiilali	(212) 900-3319
Consumer Finance		REAL ESTATE	
	(445) 005 0040	REAL ESTATE	
David M. Scharf	(415) 835-8942	Hausing 9 Land Davelonment	
Douglas Greiner	(212) 906-3525	Housing & Land Development	(445) 025 0004
E		Peter L. Martin, CFA	(415) 835-8904
Financial Processing & Outsourcing	(445) 005 0040	Aaron Hecht	(415) 835-3963
David M. Scharf	(415) 835-8942	Bharathwajan Iyengar	(415) 835-3902
Douglas Greiner	(212) 906-3525		
		Lodging & Leisure	
Insurance		Robert A. LaFleur	(212) 906-3510
Matthew J. Carletti	(312) 768-1784	Whitney Stevenson	(212) 906-3538
Christine Worley	(312) 768-1786		
·	, ,	Property Services	
Investment Banks & Brokers		Mitch Germain	(212) 906-3546
Devin Ryan	(212) 906-3578	Peter Lunenburg	(212) 906-3537
Brian McKenna	(212) 906-3545	ŭ	, ,
	(= :=) ::: :::	REITs: Healthcare, Residential, & Spec	cialty
Mortgage Operating Companies		Peter L. Martin, CFA	(415) 835-8904
REITs: Agency, Hybrid, & Commercial M	/ortgage	Aaron Hecht	(415) 835-3963
Steven C. DeLaney	(404) 848-7773	Arthur Kwok	(415) 835-8908
Trevor Cranston, CFA	(415) 869-4431	7 ii	(+10) 000 0000
Charter Robinson	(757) 613-8955	REITs: Office, Industrial, & Diversified	
		Mitch Germain	(212) 906-3546
Benjamin Zucker	(212) 906-3529	Peter Lunenburg	(212) 906-3537
HEALTHCARE		i eter Lunerburg	(212) 900-3337
HEALTHCARE		Residential Services	
Dietechnology		Peter L. Martin, CFA	(415) 835-8904
Biotechnology	(242) 700 4705	· · · · · · · · · · · · · · · · · · ·	
Liisa A. Bayko	(312) 768-1785	Aaron Hecht	(415) 835-3963
Masha Chapman	(415) 835-8944	Bharathwajan Iyengar	(415) 835-3902
Bhumika Sharma, PhD	(312) 768-1795	TECHNOLOGY	
Jason N. Butler, PhD	(212) 906-3505	TECHNOLOGY	
Michael G. King, Jr.	(212) 906-3520		
Bryan Czyzewski, PhD	(212) 906-3577	Communications Infrastructure & Inte	
Naureen Quibria, PhD	(212) 906-3514	Erik Suppiger	(415) 835-3918
		John Lucia	(415) 835-3920
Healthcare Services & Facilities			
Peter L. Martin, CFA	(415) 835-8904	Internet & Digital Media	
Aaron Hecht	(415) 835-3963	Ronald V. Josey III	(212) 906-3528
Arthur Kwok	(415) 835-8908	Ignatius Njoku	(415) 835-8960
	(1, 111 111	Andrew Boone, CFA	(415) 835-3957
Life Science Tools & Diagnostics		Michael Wu	(415) 835-8996
J. T. Haresco, III, PhD	(415) 869-4477		, ,
Marie T. Casey, PhD	(415) 835-3955	Software	
mane 1. Gasey, 1 11D	(+10) 000 0000	Patrick Walravens	(415) 835-8943
Medical Devices		Peter Lowry	(415) 869-4418
J. T. Haresco, III, PhD	(415) 869-4477	Mathew Spencer	(415) 835-8930
Marie T. Casey, PhD	(415) 835-3955	Greg McDowell	(415) 835-3934
iviane 1. Gasey, FIID	(+10) 000-0800	Rishi Jaluria	(415) 835-3961
		Məlli Jaiulla	(+ 10) 000-0801
		Wireless & Cloud Computing Technology	naine
		Alex Gauna	(415) 835-8998
		AIGA Gauria	(+ 10) 000-0990

ADDITIONAL CONTACTS

Thomas R. Wright Director of Equities (212) 906-3599 Thomas Healy Head of Institutional Sales (212) 906-3533 600 Montgomery Street, Suite 1100 San Francisco, CA 94111 www.jmpsecurities.com