

## Oncology Pharmaceutical

### INDUSTRY SUMMARY

COGENT VALUATION identified **Oncology Pharmaceutical** publicly traded companies, IPOs, and recent M&A transactions within the Oncology Pharmaceutical industry, which provides a basis for market and transaction pricing that can be used by your firm in estimating market sentiment and its impact on your firm's value. Over the last year since March 31, 2017, the median 52-week share price return of the Oncology Pharmaceutical industry was 16.2%. Between March 31, 2016 and March 31, 2018, the median EV/EBITDA multiple decreased from 17.3 to 17.0. Furthermore, the median price-to-earnings multiple decreased from 21.4 to 20.5 over the same period. The median revenue growth and EBITDA margins for the industry for the quarter were 6.8% and -38.0%, respectively.

### Public Company Key Statistics

Median 52-Week  
Return

16.2%

Median 3-Year CAGR  
Return

-5.3%

Median EV/Revenue  
Multiple

8.0x

Median EV/EBITDA  
Multiple

17.0x

Median Price/Earnings  
Multiple

20.5x

Median EV/Gross CF  
Multiple

10.4x

## Comparable Public Company Market Price Returns as of March 31, 2018

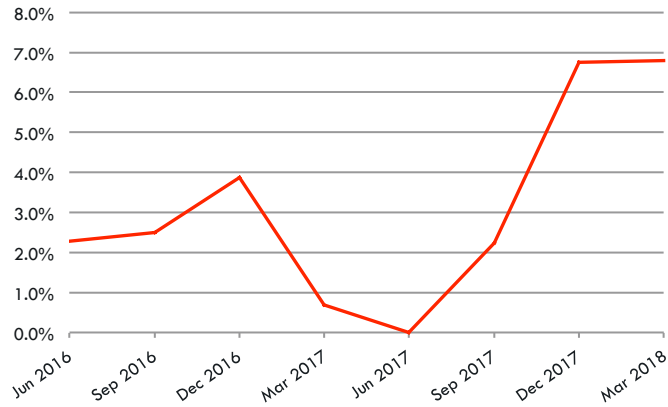
	YTD	3 Month	1 Year	2 Year	2017	2016	2015	2014
<b>Affimed N.V.</b>	42.3%	42.3%	-17.3%	-61.0%	-27.8%	-74.7%	14.8%	N/A
<b>Bellicum Pharmaceuticals, Inc.</b>	-22.0%	-22.0%	-9.9%	-25.9%	-38.3%	-32.8%	-12.0%	N/A
<b>Calithera Biosciences, Inc.</b>	-24.6%	-24.6%	300.3%	44.2%	156.9%	-57.6%	-62.1%	N/A
<b>Globelimmune, Inc.</b>	65.5%	65.5%	-73.7%	-55.8%	19.8%	-92.5%	-49.0%	N/A
<b>Incyte Corporation</b>	-12.0%	-12.0%	57.4%	9.9%	-5.5%	-7.5%	48.3%	44.4%
<b>Loxo Oncology, Inc.</b>	37.1%	37.1%	107.3%	30.4%	162.1%	-27.2%	6.8%	N/A
<b>Luye Pharma Group Ltd.</b>	21.2%	21.2%	245.9%	110.9%	33.1%	12.9%	142.1%	N/A
<b>Merrimack Pharmaceuticals, Inc.</b>	-21.5%	-21.5%	-10.5%	-28.4%	-74.9%	-43.1%	-19.1%	N/A
<b>Nektar Therapeutics</b>	77.9%	77.9%	-77.0%	-68.3%	386.7%	-48.4%	-30.1%	112.0%
<b>Seattle Genetics, Inc.</b>	-2.2%	-2.2%	37.4%	25.0%	1.4%	-27.2%	8.7%	36.6%
<b>Vertex Pharmaceuticals Incorporated</b>	8.8%	8.8%	28.0%	3.4%	103.4%	17.6%	39.7%	-19.5%
<b>Median of Industry Public Companies</b>	3.3%	3.3%	13.4%	3.4%	26.5%	-27.2%	5.9%	48.2%

Multiple year periods are calculated as the average annual return.

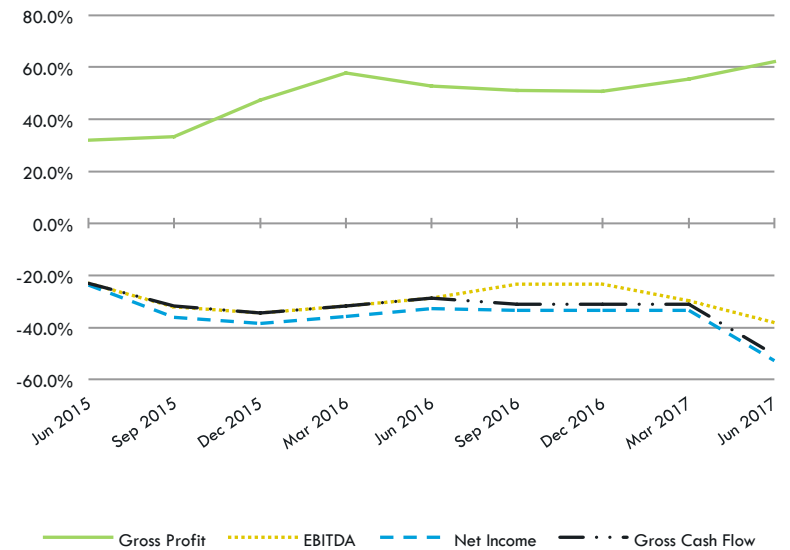
■ Highest Return    
 ■ Lowest Return    
 ■ Median Return

# Industry Revenue Growth and Profit Margins for the Past Two Years

Median Quarterly Revenue Growth of All Oncology Pharma Companies



Median Gross Profit, EBITDA, Net Income, and Gross Cash Flow Margins



## Public Company Median Multiples by Quarter

	3/31/18	12/31/17	9/30/17	12/31/16	9/30/16	6/30/16	3/31/16	12/31/15
<b>EV/Revenues Multiple</b>	8.0x	10.2x	5.6x	3.8x	3.6x	3.8x	3.3x	3.7x
<b>EV/EBITDA Multiple</b>	19.0x	8.7x	11.9x	15.9x	17.3x	17.2x	15.4x	15.8x
<b>Price/Earnings Multiple</b>	20.5x	16.9x	13.7x	39.9x	33.1x	26.1x	33.1x	39.1x
<b>EV/Gross Cash Flows Multiple</b>	10.4x	9.1x	7.5x	30.7x	33.4x	27.3x	22.2x	29.7x

 Highest Multiple

 Lowest Multiple

 Median Multiple

## Industry Initial Public Offerings—Industry: Oncology Pharmaceutical (dollars in millions, except share prices)

Offer Date	Company Name	Offer Price	Shares Offered	Amount Raised	Total Assets	Debt	LTM Revenues	LTM EBITDA	LTM Net Income	LTM Cash Flows
3/8/18	<b>BioXcel Therapeutics, Inc.</b>	\$11.00	5.5	\$60.0	\$2.2	\$0.7	\$0.0	(\$4.5)	(\$15.1)	(\$15.2)
1/25/18	<b>ARMO BioSciences, Inc.</b>	\$17.00	7.5	\$128.0	\$354.8	\$0.0	\$0.0	(\$42.5)	(\$7.0)	(\$10.2)
12/27/17	<b>Cue Biopharma, Inc.</b>	\$7.50	8.8	\$66.2	\$93.0	\$0.0	\$0.0	(\$15.3)	(\$68.5)	(\$37.5)
11/8/17	<b>Telix Pharmaceuticals Limited</b>	\$0.50	77.0	\$38.4	\$53.7	\$29.5	N/A	N/A	N/A	N/A
10/11/17	<b>Beta Drugs Limited</b>	\$1.30	2.3	\$3.0	\$7.2	\$0.0	\$6.4	\$1.1	\$86.4	\$177.9
4/6/17	<b>BerGenBio ASA</b>	\$2.90	16.0	\$46.4	\$787.6	\$133.8	\$0.0	(\$20.6)	\$86.4	\$176.7
2/14/17	<b>Inventiva S.A.</b>	\$8.99	5.7	\$50.8	\$786.5	\$9.1	\$15.1	(\$11.8)	\$87.5	\$175.2
	<b>Median IPO</b>	<b>nm</b>	<b>nm</b>	<b>\$50.8</b>	<b>\$584.9</b>	<b>\$71.3</b>	<b>\$0.0</b>	<b>(\$13.5)</b>	<b>\$39.7</b>	<b>\$82.5</b>

Multiple year periods are calculated as the average annual return.

■ Highest Return   
 ■ Lowest Return   
 ■ Median Return

## Recent Merger and Acquisition Transactions for a Majority Stake (dollars in millions)

Transaction Date	Target	Acquirer	Transaction Size	% Bought	LTM Revenues	EV/ Revenues
3/9/18	Cascadian Therapeutics, Inc.	Seattle Genetics, Inc.	\$623.1	100%	N/A	N/A
2/13/18	Sucampo Pharmaceuticals	Mallinckrodt Public Limited	\$1,220.6	100%	\$250.5	0.9x
1/31/18	Advanced Accelerator Apps.	Novartis Groupe France	\$3,917.1	100%	\$167.3	27.6x
11/13/17	Laboratorio DOSA S.A.	Grupo Farmaceutico	\$29.9	100%	\$18.6	N/A
9/1/17	Merck Kommanditgesellschaft	Fresenius Kabi AG	\$778.6	100%	N/A	N/A
4/3/17	Merrimack Pharmaceuticals	Ipsen S.A.	\$1,025.0	100%	N/A	N/A
2/15/17	Thallion Pharmaceuticals, Inc.	Taro Pharmaceuticals Inc.	\$2.0	74%	\$2.3	N/A
12/29/16	ARIAD Pharmaceuticals, Inc.	Takeda Pharmaceuticals	\$5,451.5	100%	\$186.2	13.6x
11/29/16	Tetralogic Pharmaceuticals	Medivir AB	\$426.1	100%	\$114.6	3.2x
10/29/16	Kolltan Pharmaceuticals, Inc.	Juno Therapeutics, Inc.	\$10.0	100%	N/A	N/A
10/21/16	Cormorant Pharmaceuticals AB	Bristol-Myers Squibb	\$520.0	100%	N/A	N/A

■ USA
 ■ International
 ■ Highest
 ■ Lowest
 ■ Median

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## Recent Merger and Acquisition Transactions for a Majority Stake (dollars in millions)

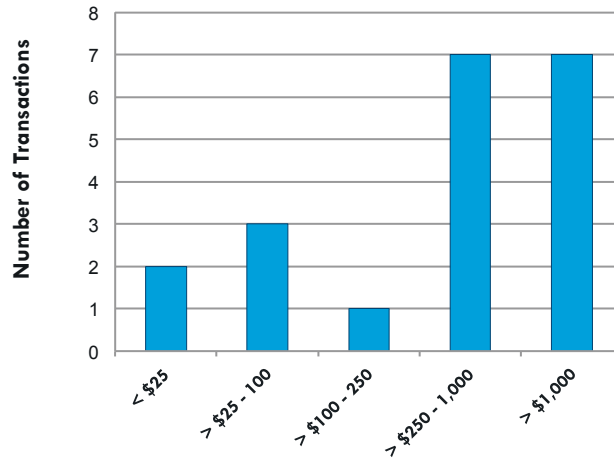
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Transaction Date	Target	Acquirer	Transaction Size	% Bought	LTM Revenues	EV/ Revenues
6/3/17	Baxalta Incorporated	Shire plc	\$36,219.9	100%	\$6,148	5.7x
12/4/15	DARA BioSciences, Inc.	Midatech Pharma Plc	\$30.7	100%	\$2.4	8.8x
10/7/15	AstraZeneca PLC, Caprelsa	Genzyme Corporation	\$300.0	100%	\$48.0	6.3x
7/23/15	Sigma-Tau Pharma	Baxter International Inc.	\$900.0	100%	\$100.0	9.0x
5/26/15	Pharmacyclics, Inc.	AbbVie Inc.	\$21,053.4	100%	\$816.1	24.7x
3/20/15	EUSA Pharma, Inc.	Essex Woodlands Health	\$34.0	100%	\$27.0	1.3x
2/28/14	Paladin Labs Inc.	Endo International plc	\$1,777.9	100%	\$263.0	5.8x
12/4/15	Agila Specialties Private	Mylan, Inc.	\$1,850.0	100%	\$255.0	7.3x
6/3/16	Baxalta Incorporated	Shire plc	\$36,219.9	100%	\$186.2	7.3x
Median of the 19 M&A Transaction Targets			\$30.7	100%	\$182.2	5.7x

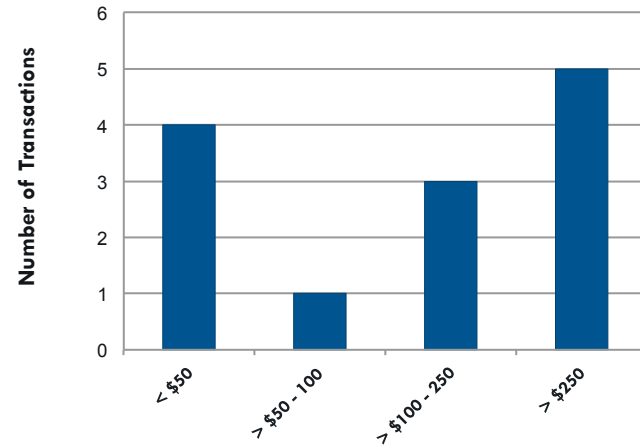
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## Recent Merger and Acquisition Transactions for a Majority Stake (dollars in millions) as of March 31, 2018

**Size of M&A Transactions**



**LTM Revenues Reported**





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**Definitions of Financial Terms Used in this Quarterly Industry Update:**

**Enterprise Value (EV):** Market Value of Equity + Market Value of Debt —Cash

**Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA):** Profitability metric sometimes also referred to as operating profit or operating earnings.

**Gross Cash Flows:** Net Income + Depreciation and Amortization Expense

**Latest Twelve Months (LTM):** Financial information is as of the latest twelve months through the date of this Quarterly Industry Update.

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