

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 September 30, 2017, the median 52-week share price return of the Oncology Pharmaceutical industry was 23.1%. Between September 30, 2016 and September 30, 2018, the median EV/EBITDA multiple decreased from 15.1 to 11.8. Furthermore, the median price-to-earnings multiple decreased from 17.2 to 16.4 over the same period. The median revenue growth and EBITDA margins for the industry for the quarter were 10.3% and -31.2%, respectively.

Public Company Key Statistics

Median 52-Week
Return

23.1%

Median 3-Year CAGR
Return

-.4%

Median EV/Revenue
Multiple

7.4x

Median EV/EBITDA
Multiple

11.8x

Median Price/Earnings
Multiple

16.2x

Median EV/Gross CF
Multiple

14.7x

Comparable Public Company Market Price Returns as of September 30, 2018

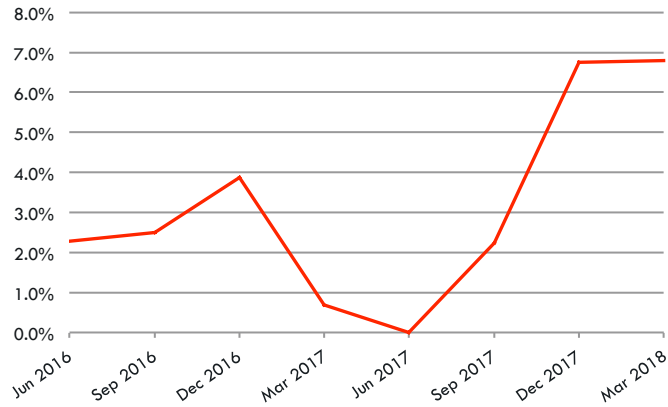
	YTD	3 Month	1 Year	2 Year	2017	2016	2015	2014
Affimed N.V.	234.6%	42.3%	-17.3%	-61.0%	-27.8%	-74.7%	14.8%	N/A
Bellicum Pharmaceuticals, Inc.	-26.8%	-22.0%	-9.9%	-25.9%	-38.3%	-32.8%	-12.0%	N/A
Calithera Biosciences, Inc.	-37.1%	-24.6%	300.3%	44.2%	156.9%	-57.6%	-62.1%	N/A
Globelimmune, Inc.	-30.9%	65.5%	-73.7%	-55.8%	19.8%	-92.5%	-49.0%	N/A
Incyte Corporation	-27.1%	-12.0%	57.4%	9.9%	-5.5%	-7.5%	48.3%	44.4%
Loxo Oncology, Inc.	102.9%	37.1%	107.3%	30.4%	162.1%	-27.2%	6.8%	N/A
Luye Pharma Group Ltd.	13.6%	21.2%	245.9%	110.9%	33.1%	12.9%	142.1%	N/A
Merrimack Pharmaceuticals, Inc.	-48.0%	-21.5%	-10.5%	-28.4%	-74.9%	-43.1%	-19.1%	N/A
Nektar Therapeutics	-18.2%	77.9%	-77.0%	-68.3%	386.7%	-48.4%	-30.1%	112.0%
Seattle Genetics, Inc.	24.1%	-2.2%	37.4%	25.0%	1.4%	-27.2%	8.7%	36.6%
Vertex Pharmaceuticals Incorporated	10.6%	8.8%	28.0%	3.4%	103.4%	17.6%	39.7%	-19.5%
Median of Industry Public Companies	-4.6%	3.3%	13.4%	3.4%	26.5%	-27.2%	5.9%	48.2%

Multiple year periods are calculated as the average annual return.

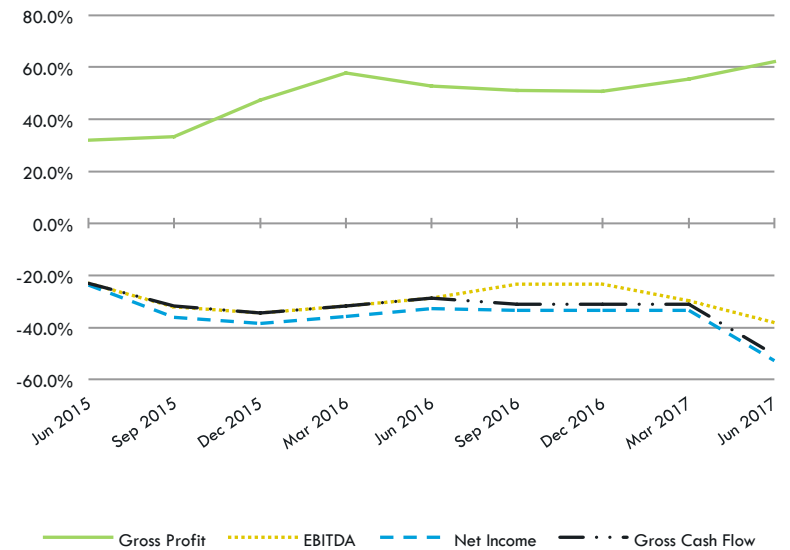
■ Highest Return
 ■ Lowest Return
 ■ Median Return

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

	9/30/18	6/30/18	3/31/18	12/31/17	9/30/17	6/30/17	3/31/17	12/31/16
EV/Revenues Multiple	9/30/18	8.2x	10.2x	3.8x	3.6x	3.8x	3.3x	3.7x
EV/EBITDA Multiple	7.4x	22.8x	8.7x	15.9x	17.3x	17.2x	15.4x	15.8x
Price/Earnings Multiple	11.8x	18.0x	16.9x	39.9x	33.1x	26.1x	33.1x	39.1x
EV/Gross Cash Flows Multiple	16.4x	11.9x	9.1x	30.7x	33.4x	27.3x	22.2x	29.7x

■ Highest Multiple
 ■ Lowest Multiple
 ■ Median Multiple

Industry Initial Public Offerings—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
9/27/18	Gritstone Oncology, Inc.	\$15.00	7.0	\$60.0	\$2.2	\$0.7	\$0.0	(\$4.5)	(\$15.1)	(\$15.2)
9/26/18	Sutro Biopharma, Inc.	\$15.00	6.3	\$128.0	\$354.8	\$0.0	\$33.0	(\$42.5)	(\$7.0)	(\$10.2)
9/13/18	Principia Biopharma Inc.	\$17.00	4.1	\$66.2	\$93.0	\$0.0	\$29.3	(\$15.3)	(\$68.5)	(\$37.5)
6/27/18	Forty Seven, Inc.	\$16.00	7.2	\$38.4	\$53.7	\$29.5	\$0.0	N/A	N/A	N/A
6/26/18	Neon Therapeutics, Inc.	\$16.00	5.5	\$3.0	\$7.2	\$0.0	\$0.0	\$1.1	\$86.4	\$177.9
4/6/17	Polyphor AG	\$37.97	7.5	\$46.4	\$787.6	\$133.8	\$6.7	(\$20.6)	\$86.4	\$176.7
2/14/17	Gritstone Oncology, Inc.	\$15.00	8.8	\$50.8	\$786.5	\$9.1	\$56.6	(\$11.8)	\$87.5	\$175.2
	Median IPO	nm	nm	\$50.8	\$584.9	\$71.3	6.7	(\$13.5)	\$39.7	\$82.5

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
9/28/18	Tusk Therapeutics Ltd	Roche Holding AG	\$761.0	100%	N/A	N/A
8/31/18	Oncology Business of Shire	LES LABORATOIRES SERVIER SAS	\$2,400.0	100%	\$250.5	0.9x
6/21/18	ARMO BioSciences, Inc.	Eli Lilly and Company	\$1,627.9	100%	\$167.3	27.6x
5/31/18	Crown Bioscience International	JSR Corporation	\$364.9	100%	\$18.6	N/A
5/4/18	Ablynx NV	Sanofi	\$4,768.7	100%	N/A	N/A
4/3/18	MPI Research Inc.	Charles River Laboratories International, Inc.	\$800.0	100%	N/A	N/A
3/9/18	Cascadian Therapeutics, Inc.	Seattle Genetics, Inc.	\$623.1	74%	\$2.3	N/A
2/13/18	Sucampo Pharmaceuticals	Mallinckrodt Public Limited	\$1,220.6	100%	\$186.2	13.6x
1/31/18	Advanced Accelerator Apps.	Novartis Groupe France	\$3,917.1	100%	\$114.6	3.2x
11/13/17	Laboratorio DOSA S.A.	Grupo Farmaceutico	\$29.9	100%	N/A	N/A
9/1/17	Merck Kommanditgesellschaft	Fresenius Kabi AG	\$778.6	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)

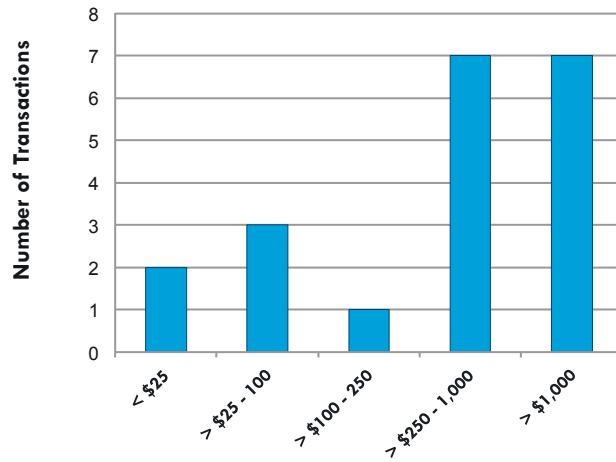
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Transaction Date	Target	Acquirer	Transaction Size	% Bought	LTM Revenues	EV/ Revenues
6/3/17	Baxalta Incorporated	Shire plc	\$36,219.9	100%	\$6,148	5.7x
12/4/15	DARA BioSciences, Inc.	Midatech Pharma Plc	\$30.7	100%	\$2.4	8.8x
10/7/15	AstraZeneca PLC, 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

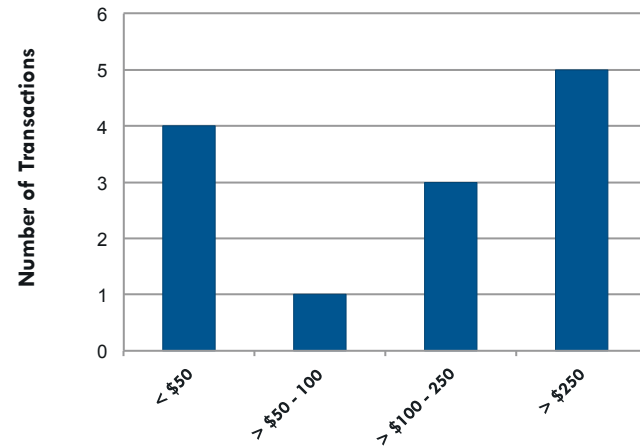
USA
 International
 Highest
 Lowest
 Median

Recent Merger and Acquisition Transactions for a Majority Stake (dollars in millions) as of September 30, 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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