

# Quarterly Industry Update

As of December 31, 2016

Industry: Blood Diagnostics



## Industry Summary

Cogent Valuation identified Blood Diagnostics publicly traded companies, IPOs, and recent M&A transactions within the Blood Diagnostics 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 December 31, 2015, the median 52-week share price return of the Blood Diagnostics industry was -2.8%. Between December 31, 2014 and December 31, 2016, the median EV/EBITDA multiple increased from 12.0 to 15.4. Furthermore, the median price-to-earnings multiple increased from 22.8 to 28.3 over the same period.

## Comparable Public Company Key Statistics

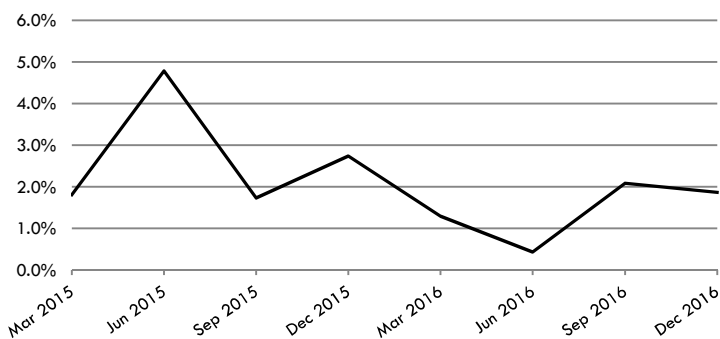
Median 52-Week Return	-2.8%	Median EV/Revenue Multiple	4.6x	Median Price/Earnings Multiple	28.3x
Median 3-Year CAGR Return	5.1%	Median EV/EBITDA Multiple	15.4x	Median EV/Gross CF Multiple	21.9x

## Comparable Public Company Market Price Returns (As of December 31, 2016)

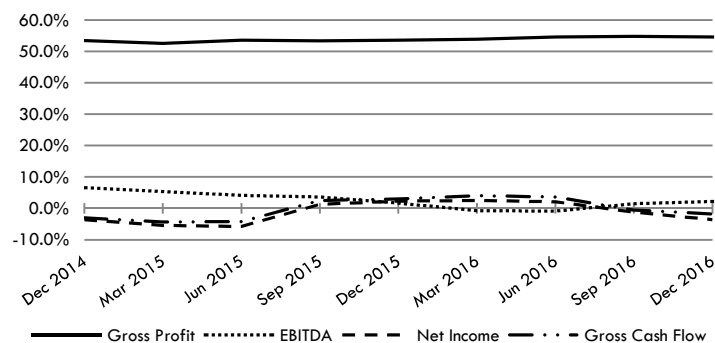
	YTD	3 Month	1 Year	2 Year	3 Year	5 Year	2015	2014	2013	2012	2011
Abaxis, Inc.	-5.2%	2.2%	-5.2%	-3.6%	9.7%	13.8%	-2.0%	42.0%	7.8%	34.1%	3.1%
BG Medicine, Inc.	-89.0%	-73.2%	-89.0%	-85.2%	-78.7%	-70.8%	-80.2%	-55.7%	-55.0%	-51.1%	N/A
DexCom, Inc.	-27.1%	-31.9%	-27.1%	4.1%	19.0%	45.0%	48.8%	55.5%	160.6%	46.0%	-31.8%
Escalon Medical Corp.	-90.1%	-84.3%	-90.1%	-74.5%	-62.4%	-36.3%	-34.2%	-18.3%	107.3%	-5.0%	-33.3%
Insulet Corporation	-0.3%	-8.0%	-0.3%	-9.6%	0.5%	14.9%	-17.9%	24.2%	74.8%	12.7%	21.5%
Masimo Corporation	62.4%	13.3%	62.4%	60.0%	32.1%	29.3%	57.6%	-9.9%	39.1%	12.4%	-35.7%
MGC Diagnostics Corporation	19.5%	12.7%	19.5%	11.0%	-14.6%	8.6%	3.1%	-49.4%	114.6%	13.0%	0.4%
Quest Diagnostics Incorporated	29.2%	8.6%	29.2%	17.1%	19.7%	9.6%	6.1%	25.3%	-8.1%	0.4%	7.6%
<b>Median of Industry Public Companies</b>	<b>-2.8%</b>	<b>-2.9%</b>	<b>-2.8%</b>	<b>0.2%</b>	<b>5.1%</b>	<b>11.7%</b>	<b>0.6%</b>	<b>7.1%</b>	<b>57.0%</b>	<b>12.6%</b>	<b>0.4%</b>

(Multiple year periods are calculated as the average annual return.)

## Median Quarterly Revenue Growth of All Blood Diagnostics Companies



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



## Median Public Company Multiples of the Blood Diagnostics Industry

Date:	12/31/2014	3/31/2015	6/30/2015	9/30/2015	12/31/2015	3/31/2016	6/30/2016	9/30/2016	12/31/2016
EV/Revenues Multiple	2.5x	3.0x	3.4x	2.3x	2.2x	2.8x	3.3x	3.3x	4.6x
EV/EBITDA Multiple	12.0x	16.9x	16.1x	14.0x	14.1x	13.8x	13.9x	14.8x	15.4x
Price/Earnings Multiple	22.8x	23.9x	29.0x	21.8x	20.2x	19.7x	21.9x	26.1x	28.3x
EV/Gross Cash Flows Multiple	33.7x	21.1x	25.4x	20.4x	19.3x	18.7x	20.1x	20.7x	21.9x

This industry research is provided at no charge to Cogent Valuation's clients. Research or detailed information not covered in this report can be obtained for a fee. Contact Steven Kam at 415-392-0888 for additional information or questions in connection with this research report. Copyright © 2017 Cogent Valuation. All Rights Reserved.

# Quarterly Industry Update

As of December 31, 2016

Industry: Blood Diagnostics

## Industry Initial Public Offerings (dollars in millions, except share prices)

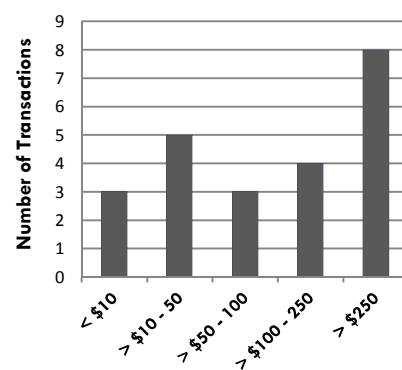
Offer Date	Company Name	Offer Price	Shares Offered	Amount Raised	Total Assets	Debt	LTM Revenues	LTM EBITDA	LTM Net Income	LTM Cash Flows
6/29/2016	ExpreS2ion Biotech Holding AB	\$0.70	3.1	\$2.1	N/A	N/A	N/A	N/A	N/A	N/A
7/9/2015	Cellnovo Limited	\$11.73	3.0	\$34.8	\$10.5	\$11.5	\$0.2	(\$7.7)	(\$8.1)	(\$7.2)
8/6/2014	T2 Biosystems, Inc.	\$11.00	5.2	\$57.2	\$25.8	\$4.6	\$0.3	(\$21.4)	(\$23.0)	(\$20.8)
4/24/2014	Quotient Limited	\$8.00	5.0	\$40.0	\$26.4	\$15.0	\$18.5	(\$5.4)	(\$6.6)	(\$5.0)
8/2/2012	Globus Medical, Inc.	\$12.00	8.3	\$100.0	\$354.8	\$0.0	\$347.9	\$121.4	\$63.9	\$138.8
10/18/2011	ZELTIQ Aesthetics, Inc.	\$13.00	7.0	\$91.0	\$19.3	\$1.0	\$50.5	(\$5.1)	(\$6.4)	(\$4.4)
2/3/2011	BG Medicine, Inc.	\$7.00	5.0	\$35.0	\$6.0	\$4.5	\$1.0	(\$15.4)	(\$18.1)	(\$14.9)
2/2/2011	Tornier N.V.	\$19.00	8.8	\$166.3	\$499.2	\$133.8	\$223.4	\$13.2	(\$62.1)	\$28.6
8/13/2010	Electromed, Inc.	\$4.00	1.7	\$6.8	\$13.4	\$3.8	\$14.2	\$2.3	\$1.0	\$2.6
5/28/2010	GenMark Diagnostics, Inc.	\$6.00	4.6	\$27.6	\$16.1	\$0.0	\$1.2	(\$17.3)	(\$20.4)	(\$16.0)
4/22/2010	Lianluo Smart Limited	\$8.00	1.5	\$12.0	\$17.8	\$1.5	\$12.4	\$3.6	\$2.7	\$3.9
<b>Median of All IPOs</b>		<b>nm</b>	<b>nm</b>	<b>\$57.2</b>	<b>\$26.1</b>	<b>\$4.6</b>	<b>\$16.4</b>	<b>(\$1.4)</b>	<b>(\$6.5)</b>	<b>(\$0.9)</b>

nm: not meaningful

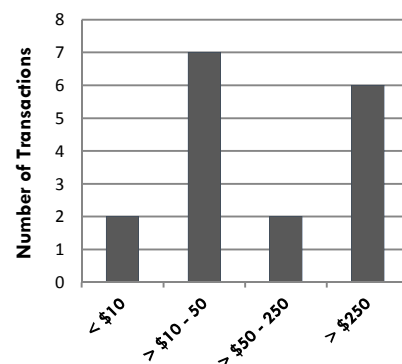
## Recent Merger and Acquisition Transactions for a Majority Stake (dollars in millions)

Transaction Date	Target	Acquirer	Transaction Size	% Bought	LTM Revenues	EV/Revenues
11/4/2016	Cepheid	Danaher Corporation	\$4,412.0	100%	\$564.2	7.2x
6/29/2016	Nanosphere, Inc.	Luminex Corporation	\$106.5	100%	\$23.0	4.0x
4/5/2016	Allenex AB (publ)	CareDx, Inc	\$38.4	78%	\$16.4	2.6x
3/31/2016	Affymetrix Inc.	Thermo Fisher Scientific	\$1,251.0	100%	\$359.8	3.1x
3/24/2016	Magellan Diagnostics, Inc.	Meridian Bioscience, Inc.	\$66.0	100%	\$16.0	4.1x
9/29/2015	Health Diagnostic Laboratory	True Health Diagnostics	\$37.1	100%	N/A	N/A
6/11/2015	Biosensors International	Hony Capital (Beijing)	\$50.0	100%	N/A	N/A
11/20/2014	LipoScience, Inc.	Laboratory Corp. of America	\$101.0	100%	\$45.5	1.3x
10/31/2014	Cell Marque Corporation	Sigma-Aldrich Corporation	\$170.0	100%	N/A	N/A
9/10/2013	Flowsense Medical	Baxter International	\$4.5	100%	\$0.1	N/A
9/6/2013	Gambro AB	Baxter International	\$4,013.8	100%	\$1,670.7	2.4x
2/6/2013	Epocal	Inverness Medical	\$241.5	100%	N/A	N/A
10/3/2012	Drew Scientific	ERBA Diagnostics	\$6.5	100%	\$13.0	0.5x
8/1/2012	Gen-Probe	Hologic	\$4,204.1	100%	\$586.6	6.6x
5/31/2012	SunTech Medical Group	Halma	\$57.0	100%	\$23.0	2.3x
5/22/2012	Navilyst Medical	AngioDynamics	\$374.5	100%	\$148.6	2.5x
4/2/2012	Accutome	Halma	\$25.0	100%	\$20.2	1.2x
1/3/2012	Verum Diagnostica	Roche Holding	\$13.3	100%	N/A	N/A
11/23/2011	Shanghai Yuanqi	SHMY Healthdigit Biochips	\$54.0	70%	\$0.1	N/A
11/8/2011	Axis-Shield	Alere	\$396.1	100%	\$164.7	2.3x
9/2/2011	Life Enhancement Technology	VasoHealthcare	\$3.3	100%	N/A	N/A
8/23/2011	Phadia	Thermo Fisher Scientific	\$3,512.8	100%	\$523.4	6.7x
6/29/2011	Beckman Coulter	Danaher	\$7,392.9	100%	\$3,663.4	1.9x
<b>Median of the 23 M&amp;A Transaction Targets</b>			<b>\$101.0</b>	<b>100%</b>	<b>\$45.5</b>	<b>2.5x</b>

### Size of M&A Transactions



### LTM Revenues Reported



### 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.

# Quarterly Industry Update

As of December 31, 2016

Diagnostics Industry Aggregates



## Comparable Public Company Key Statistics

Median 52-Week Return	-1.9%	Median EV/Revenue Multiple	3.8x	Median Price/Earnings Multiple	41.4x
Median Year-to-Date Return	-1.9%	Median EV/EBITDA Multiple	16.0x	Median EV/Gross CF Multiple	23.9x

## Comparable Public Company Market Price Returns (As of December 31, 2016)

	YTD	3 Month	1 Year	2 Year	3 Year	5 Year	2015	2014	2013	2012	2011
Abaxis, Inc.	-5.2%	2.2%	-5.2%	-3.6%	9.7%	13.8%	-2.0%	42.0%	7.8%	34.1%	3.1%
Accelerate Diagnostics, Inc.	-3.4%	-23.9%	-3.4%	4.0%	19.4%	76.5%	12.0%	57.3%	202.7%	233.1%	22.2%
AngioDynamics, Inc.	39.0%	-3.8%	39.0%	-5.8%	-0.6%	2.6%	-36.1%	10.8%	56.1%	-25.8%	-3.6%
BG Medicine, Inc.	-89.0%	-73.2%	-89.0%	-85.2%	-78.7%	-70.8%	-80.2%	-55.7%	-55.0%	-51.1%	N/A
Biopix, Inc.	57.6%	26.7%	57.6%	-47.9%	-39.2%	-39.3%	-82.8%	-17.3%	-16.4%	-56.0%	-67.8%
Bio-Techne Corporation	14.3%	-6.1%	14.3%	5.5%	2.8%	8.5%	-2.6%	-2.4%	38.5%	0.1%	3.9%
Chembio Diagnostics, Inc.	27.6%	-8.1%	27.6%	31.9%	26.4%	15.1%	36.3%	16.0%	-28.8%	40.8%	-1.2%
CombiMatrix Corporation	-75.8%	-5.7%	-75.8%	-63.0%	-57.5%	-61.2%	-43.4%	-43.9%	-56.4%	-73.6%	-7.0%
DexCom, Inc.	-27.1%	-31.9%	-27.1%	4.1%	19.0%	45.0%	48.8%	55.5%	160.6%	46.0%	-31.8%
Digirad Corporation	-13.6%	-2.0%	-13.6%	7.1%	10.6%	20.6%	32.8%	17.8%	80.5%	4.6%	-6.7%
Enzo Biochem, Inc.	54.2%	36.3%	54.2%	25.0%	33.5%	25.4%	1.4%	52.1%	8.1%	20.5%	-57.6%
ERBA Diagnostics, Inc.	-82.7%	-52.0%	-82.7%	-72.5%	-55.5%	-11.4%	-56.2%	16.1%	206.7%	102.3%	-22.8%
Escalon Medical Corp.	-90.1%	-84.3%	-90.1%	-74.5%	-62.4%	-36.3%	-34.2%	-18.3%	107.3%	-5.0%	-33.3%
Exact Sciences Corporation	44.7%	-28.1%	44.7%	-30.2%	4.4%	10.5%	-66.4%	133.5%	11.0%	30.4%	35.8%
Forward Industries, Inc.	-15.5%	-16.1%	-15.5%	9.6%	-6.9%	-5.6%	42.3%	-32.9%	4.7%	-11.4%	-48.1%
GenMark Diagnostics, Inc.	57.7%	3.7%	57.7%	-5.2%	-2.7%	24.3%	-43.0%	2.4%	47.7%	118.4%	0.7%
Insulet Corporation	-0.3%	-8.0%	-0.3%	-9.6%	0.5%	14.9%	-17.9%	24.2%	74.8%	12.7%	21.5%
Luminex Corporation	-5.4%	-11.0%	-5.4%	3.8%	1.4%	-1.0%	14.0%	-3.3%	15.5%	-20.9%	16.1%
Masimo Corporation	62.4%	13.3%	62.4%	60.0%	32.1%	29.3%	57.6%	-9.9%	39.1%	12.4%	-35.7%
Meridian Bioscience, Inc.	-13.7%	-8.2%	-13.7%	3.7%	-12.6%	-1.2%	24.7%	-38.0%	31.0%	7.5%	-18.7%
Merit Medical Systems, Inc.	42.5%	9.1%	42.5%	23.7%	19.0%	14.6%	7.3%	10.1%	13.2%	3.9%	5.7%
Merrimack Pharmaceuticals, Inc.	-48.4%	-35.7%	-48.4%	-39.9%	-8.5%	N/A	-30.1%	112.0%	-12.5%	N/A	N/A
MGC Diagnostics Corporation	19.5%	12.7%	19.5%	11.0%	-14.6%	8.6%	3.1%	-49.4%	114.6%	13.0%	0.4%
Myriad Genetics, Inc.	-61.4%	-19.0%	-61.4%	-30.0%	-7.4%	-4.5%	26.7%	62.3%	-23.0%	30.1%	-8.3%
Navidea Biopharmaceuticals, Inc.	-52.1%	-30.4%	-52.1%	-41.9%	-32.5%	-24.6%	-29.6%	-8.7%	-26.9%	8.0%	27.2%
Neogen Corporation	16.8%	18.0%	16.8%	15.4%	13.0%	26.4%	14.0%	8.5%	51.3%	47.9%	-25.3%
OraSure Technologies, Inc.	36.3%	10.2%	36.3%	-6.9%	11.8%	-0.7%	-36.5%	61.2%	-12.4%	-21.2%	58.4%
Quest Diagnostics Incorporated	29.2%	8.6%	29.2%	17.1%	19.7%	9.6%	6.1%	25.3%	-8.1%	0.4%	7.6%
Quidel Corporation	1.0%	-3.0%	1.0%	-13.9%	-11.5%	7.2%	-26.7%	-6.4%	65.5%	23.4%	4.7%
Surmodics, Inc.	25.3%	-15.6%	25.3%	7.2%	1.4%	11.6%	-8.3%	-9.4%	9.1%	52.5%	23.5%
T2 Biosystems, Inc.	-51.9%	-27.3%	-51.9%	-47.7%	N/A	N/A	-43.1%	N/A	N/A	N/A	N/A
TrovaGene, Inc.	-61.1%	-53.2%	-61.1%	-30.1%	-28.5%	-8.6%	25.6%	-25.1%	-17.2%	110.0%	5.8%
Veracyte, Inc.	7.5%	1.7%	7.5%	-10.5%	-18.9%	N/A	-25.5%	-33.4%	N/A	N/A	N/A
Vermillion, Inc.	-47.2%	-26.9%	-47.2%	-30.9%	-26.2%	-4.1%	-9.5%	-15.7%	78.8%	12.8%	-84.4%
<b>Median of Industry Public Companies</b>	<b>-1.9%</b>	<b>-8.0%</b>	<b>-1.9%</b>	<b>-5.5%</b>	<b>-0.6%</b>	<b>8.5%</b>	<b>-5.4%</b>	<b>2.4%</b>	<b>14.4%</b>	<b>12.7%</b>	<b>-0.4%</b>

(Multiple year periods are calculated as the average annual return.)

# Quarterly Industry Update

As of December 31, 2016

Diagnostics Industry Aggregates



## Median Public Company Multiples of the Diagnostics Industry Aggregates

Date:	12/31/2014	3/31/2015	6/30/2015	9/30/2015	12/31/2015	3/31/2016	6/30/2016	9/30/2016	12/31/2016
EV/Revenues Multiple	3.2x	3.1x	3.4x	2.5x	3.1x	2.6x	3.0x	3.7x	3.8x
EV/EBITDA Multiple	13.7x	14.2x	14.0x	13.9x	14.8x	13.9x	13.4x	16.8x	16.0x
Price/Earnings Multiple	32.4x	35.0x	36.6x	31.8x	31.2x	36.1x	34.7x	39.3x	41.4x
EV/Gross Cash Flows Multiple	28.9x	34.3x	27.1x	24.1x	24.8x	21.5x	20.8x	23.6x	23.9x

## Industry Initial Public Offerings - Diagnostics Industry Aggregates (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
11/10/2015	Advanced Accelerator Applications S.A.	\$16.00	4.7	\$75.0	\$233.9	\$27.1	\$88.7	\$1.0	(\$17.3)	\$9.4
5/5/2015	HTG Molecular Diagnostics, Inc.	\$14.00	3.6	\$50.0	\$8.7	\$10.5	\$3.3	(\$12.4)	(\$14.0)	(\$11.9)
5/4/2015	OpGen, Inc.	\$6.00	2.9	\$17.1	\$2.7	\$3.2	\$4.1	(\$5.0)	(\$5.7)	(\$4.5)
2/18/2015	Check-Cap Ltd.	\$6.00	2.0	\$12.0	\$3.3	\$0.0	\$0.0	(\$4.0)	(\$4.2)	(\$3.9)
8/6/2014	T2 Biosystems, Inc.	\$11.00	5.2	\$57.2	\$25.8	\$4.6	\$0.3	(\$21.4)	(\$23.0)	(\$20.8)
7/16/2014	Roka Bioscience, Inc.	\$12.00	5.0	\$60.0	\$56.3	\$9.7	\$2.7	(\$27.0)	(\$30.2)	(\$24.6)
6/17/2014	Signal Genetics, Inc.	\$10.00	0.9	\$8.5	\$3.5	\$27.2	\$4.3	(\$0.4)	(\$2.3)	(\$0.2)
4/24/2014	Quotient Limited	\$8.00	5.0	\$40.0	\$26.4	\$15.0	\$18.5	(\$5.4)	(\$6.6)	(\$5.0)
2/4/2014	Biocept, Inc.	\$10.00	1.9	\$19.0	\$1.1	\$5.9	\$0.1	(\$7.9)	(\$9.7)	(\$7.6)
10/30/2013	Veracyte, Inc.	\$13.00	5.0	\$65.0	\$27.2	\$4.8	\$17.1	(\$20.6)	(\$23.2)	(\$19.9)
4/4/2013	Cancer Genetics, Inc.	\$10.00	0.6	\$6.0	\$9.0	\$15.2	\$4.3	(\$7.3)	(\$6.7)	(\$6.9)
8/2/2012	Globus Medical, Inc.	\$12.00	8.3	\$100.0	\$354.8	\$0.0	\$347.9	\$121.4	\$63.9	\$138.8
3/28/2012	Merrimack Pharmaceuticals, Inc.	\$7.00	14.3	\$100.1	\$85.3	\$0.0	\$34.2	(\$75.5)	(\$79.2)	(\$70.5)
10/18/2011	ZELTIQ Aesthetics, Inc.	\$13.00	7.0	\$91.0	\$19.3	\$1.0	\$50.5	(\$5.1)	(\$6.4)	(\$4.4)
2/3/2011	BG Medicine, Inc.	\$7.00	5.0	\$35.0	\$6.0	\$4.5	\$1.0	(\$15.4)	(\$18.1)	(\$14.9)
2/2/2011	Tornier N.V.	\$19.00	8.8	\$166.3	\$499.2	\$133.8	\$223.4	\$13.2	(\$62.1)	\$28.6
8/13/2010	Electromed, Inc.	\$4.00	1.7	\$6.8	\$13.4	\$3.8	\$14.2	\$2.3	\$1.0	\$2.6
5/28/2010	GenMark Diagnostics, Inc.	\$6.00	4.6	\$27.6	\$16.1	\$0.0	\$1.2	(\$17.3)	(\$20.4)	(\$16.0)
5/28/2010	GenMark Diagnostics, Inc.	\$6.00	4.6	\$27.6	\$16.1	\$0.0	\$1.2	(\$17.3)	(\$20.4)	(\$16.0)
4/22/2010	Lianluo Smart Limited	\$8.00	1.5	\$12.0	\$17.8	\$1.5	\$12.4	\$3.6	\$2.7	\$3.9
4/21/2010	DynaVox Inc.	\$15.00	9.4	\$140.6	\$128.4	\$79.2	\$105.2	\$28.1	\$13.5	\$30.7
11/1/2007	Nanosphere, Inc.	\$14.00	6.1	\$98.0	\$40.4	\$10.8	\$1.5	(\$24.9)	(\$25.7)	(\$23.5)
8/7/2007	Masimo Corporation	\$17.00	11.9	\$202.6	\$152.1	\$31.7	\$234.0	\$80.6	\$46.2	\$84.3
5/14/2007	Insulet Corporation	\$15.00	7.7	\$115.5	\$57.1	\$31.2	\$3.7	(\$32.2)	(\$36.0)	(\$29.8)
2/26/2007	Rosetta Genomics Ltd.	\$7.00	3.8	\$26.3	\$15.1	\$0.1	\$0.0	(\$7.4)	(\$7.3)	(\$7.3)
<b>Median of All IPOs</b>		<b>nm</b>	<b>nm</b>	<b>\$50.0</b>	<b>\$19.3</b>	<b>\$4.8</b>	<b>\$4.3</b>	<b>(\$7.3)</b>	<b>(\$9.7)</b>	<b>(\$6.9)</b>

**Disclosures and Limitations:** This research report is for informational and discussion purposes only. Information presented herein is not investment advice of any kind to any person and does not constitute a recommendation as to the purchase or sale of any interests or as to any other course of action. General, financial, and statistical information concerning the details of this report and related industry are from sources Cogent Valuation believes to be reliable. Cogent Valuation has accurately reflected such information in this research report; however, Cogent Valuation makes no representation as to the sources' accuracy or completeness and has accepted this information without further verification. Neither all nor any part of the content of this report may be conveyed to the public through advertising, public relations, news, sales, mail, direct transmittal, or other media without the prior written consent of Cogent Valuation. Cogent Valuation's research is as of the date reported herein. Cogent Valuation has no affiliation with any of the companies comprising the industry used as a basis for research in this report, nor does Cogent Valuation hold any investments in the companies listed herein. The content of this report may be used, in part, as a basis for any work that Cogent Valuation performs for you in the future at the sole discretion of Cogent Valuation. THIS REPORT IS NOT TO BE USED OR CONSIDERED UNDER ANY CIRCUMSTANCE BY ANYONE AS INVESTMENT ADVICE. This industry research is provided at no charge to Cogent Valuation's clients. Research or detailed information not covered in this report can be obtained for a fee. Contact [Steven Kam](#) at 415-392-0888 for additional information or questions in connection with this research report. Copyright © 2017 Cogent Valuation. All Rights Reserved.