

Industry BlueBook

Diagnostics & Tools

May 2023

The industry's authoritative information resource for
valuations, M&A transactions, and Financings

DASHBOARD^{1,2,3,4,5}

EV MULTIPLES

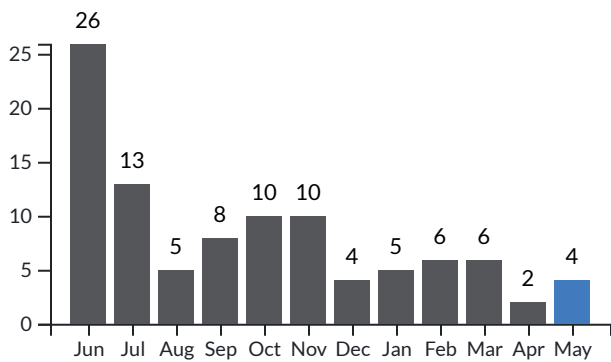
	REVENUE				EBITDA			
	LTM	%Δ	FTM	%Δ	LTM	%Δ	FTM	%Δ
In Vitro Diagnostics	4.0x	-9%	3.3x	-3%	18.4x	3%	13.2x	-1%
Diagnostic Services	2.7x	-1%	2.3x	1%	12.7x	1%	11.7x	3%
Life Science Tools	4.7x	-6%	4.4x	-9%	24.3x	6%	19.3x	-4%
In Vivo Diagnostics	3.7x	-1%	3.8x	8%	29.9x	-4%	15.0x	4%

M&A DEALS & FINANCINGS

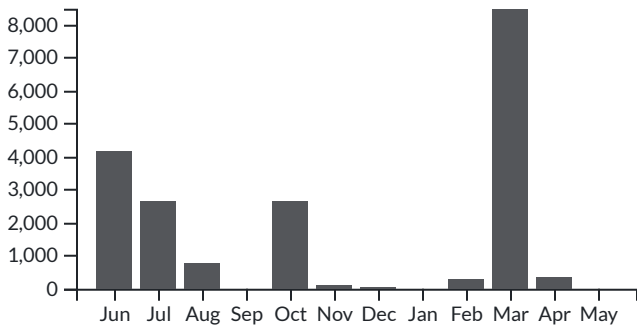
	DEAL COUNT				VOLUME (\$MM)			
	M&A	%Δ	FINANCINGS	%Δ	M&A	%Δ	FINANCINGS	%Δ
In Vitro Diagnostics	2	200%	1	NM	0	NM	14	NM
Diagnostic Services	0	NM	NM	NM	0	NM	NM	NM
Life Science Tools	2	200%	4	-33%	0	NM	24	-92%
In Vivo Diagnostics	0	NM	6	-14%	0	NM	37	-1%

- 1. Enterprise value (EV) equals equity market value (market capitalization) plus debt, plus preferred stock, minus cash and cash equivalents
- 2. Deals counted once in total if included in multiple segments
- 3. LTM = last twelve months; FTM = forward twelve months
- 4. %Δ – percent change month over month
- 5. NM – Not Meaningful

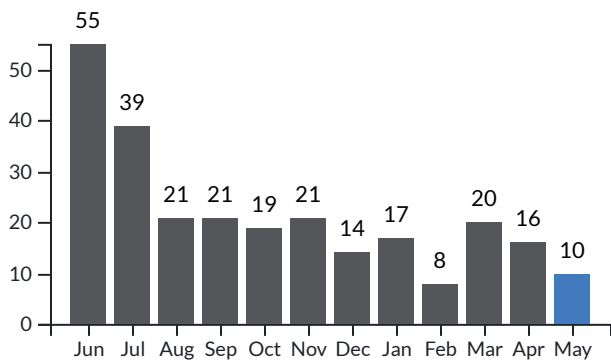
12 Month Deal Count M&A



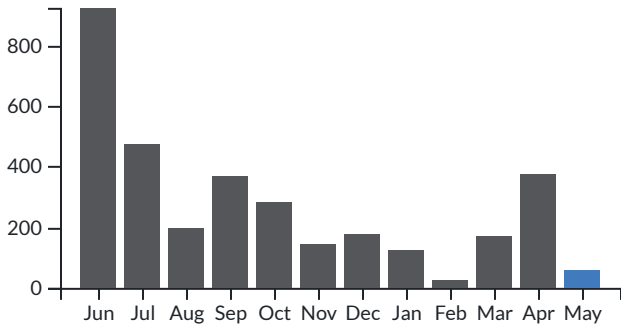
12 Month Volume M&A (\$MM)



12 Month Deal Count Financings

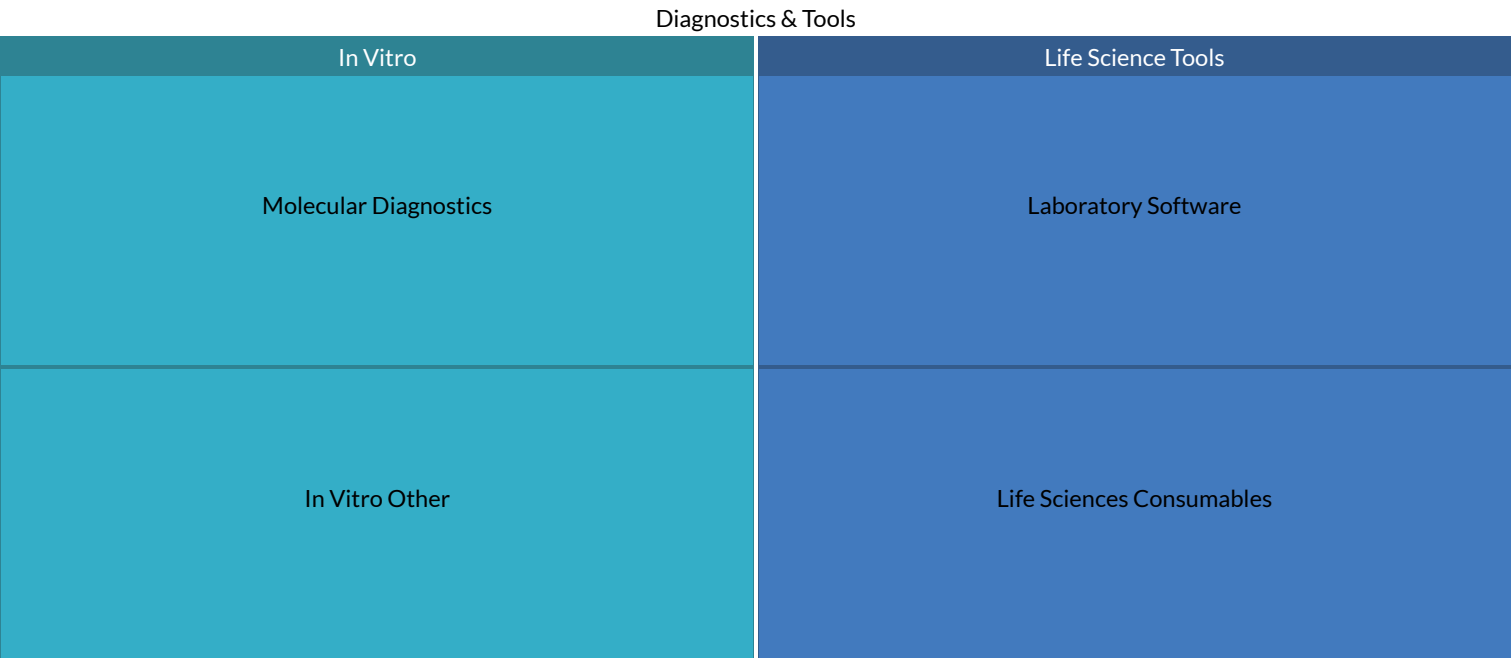


12 Month Volume Financings (\$MM)

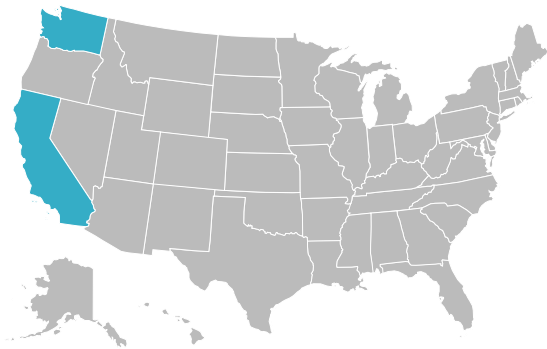


M&A ACTIVITY

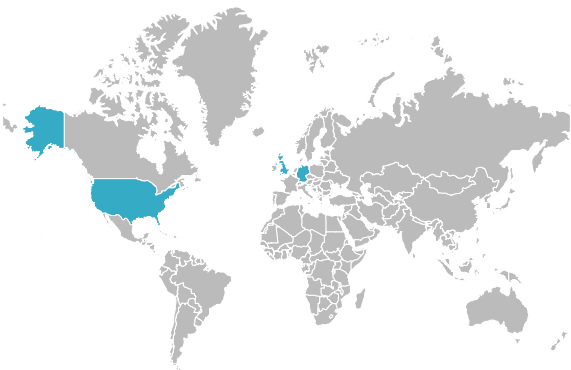
DEALS BY SEGMENT



U.S. DEALS BY STATE



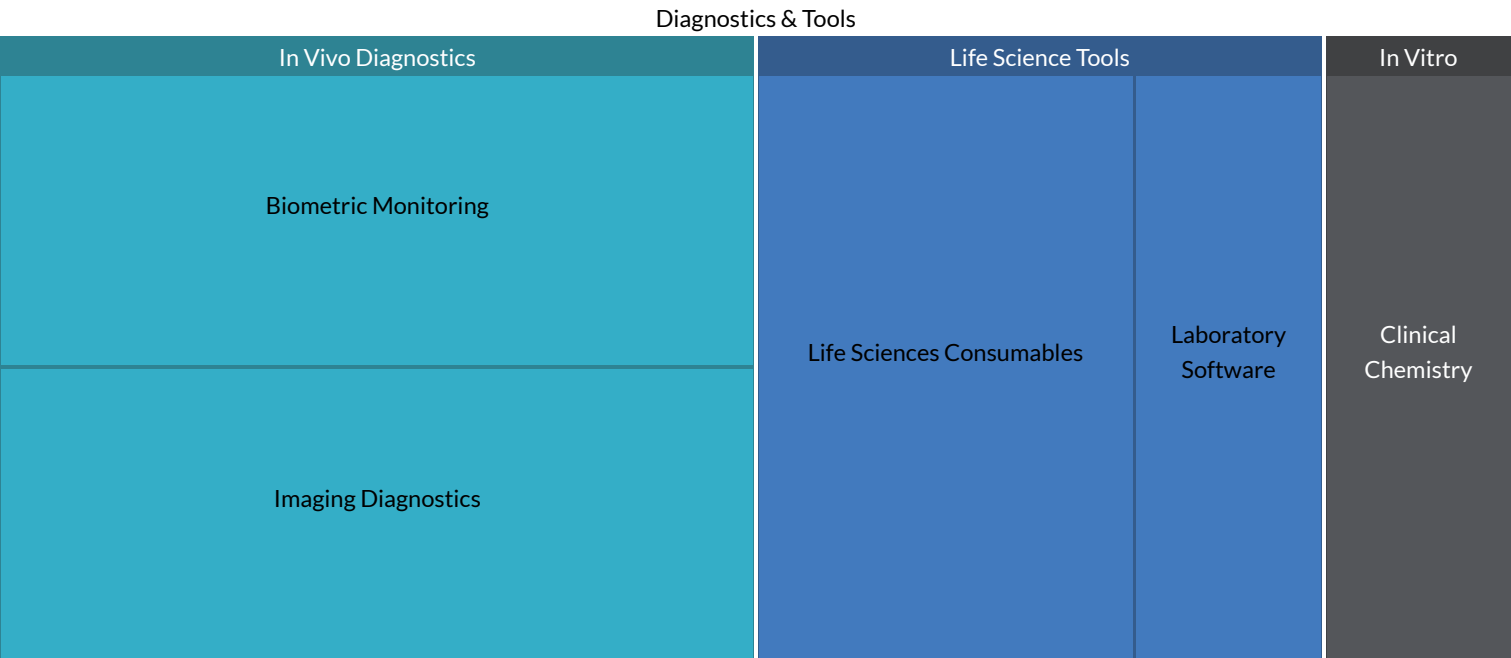
WORLDWIDE DEALS BY COUNTRY



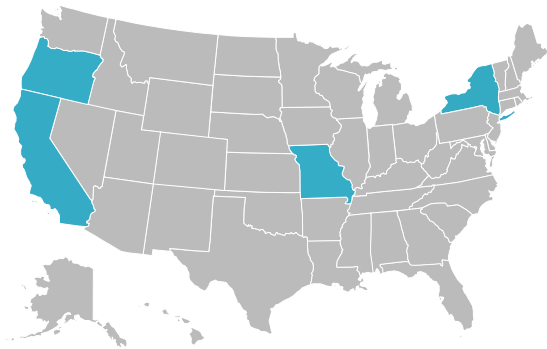
SELECTED TRANSACTIONS						
Announced Date	Segment	Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
5/26/2023	In Vitro	In Vitro Other	LRE Medical GmbH	Germany	Gyrus Capital S.A.	-
5/22/2023	In Vitro	Immunodiagnosics	Oncimmune Ltd	United Kingdom	Freenome, Inc.	-
5/11/2023	Life Science Tools	Consumables	ATG:biosynthetics GmbH	Germany	Arowor Corp.	-
5/3/2023	Life Science Tools	Lab Software	Promium, L.L.C.	United States	CliniSys Solutions Limited	-

FINANCINGS

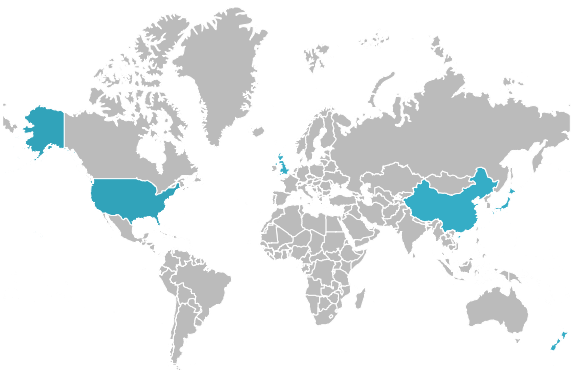
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY



SELECTED TRANSACTIONS						
Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
5/29/2023	Life Science Tools	Consumables	Goryo Chemical, Inc.	Japan	Hokkaido Research Institute for the Twenty-first Century Co.,Ltd., Investment Arm	0.2
5/26/2023	Life Science Tools	Lab Software	Linus Biotechnology Inc.	United States	Y.A.C. Holdings Co., Ltd. (TSE:6298), Bow Capital	8.0
5/22/2023	In Vivo Diagnostics	Imaging Diagnostics	Leadoptik Inc.	United States	SOSV Investments LLC, TSVC, Sony Ventures Corporation, Meta VC Partners, Enea Capital	6.7

Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
5/19/2023	In Vivo Diagnostics	Imaging Diagnostics	Telefield Medical Imaging Limited	Hong Kong	The Hong Kong Polytechnic University, Gobi Partners, Shanghai Fosun Pharmaceutical (Group) Co., Ltd. (SHSE:600196)	5.1
5/15/2023	Life Science Tools	Consumables	Novai Ltd	United Kingdom	Undisclosed	1.1
5/9/2023	In Vivo Diagnostics	Biometric Monitoring	Sensydia Corp	United States	DFJ Frontier Management Company, LLC, Colle Capital Partners LP, Orlando Health, Inc.	8.0
5/5/2023	Life Science Tools	Consumables	Viva Biotech (Shanghai) Ltd.	China	Jiangsu Shengze Investment Co.,Ltd., VVB Fund, Shenzhen Zhongjince Investment Co., Ltd., VVB Fund	14.5
5/4/2023	In Vivo Diagnostics	Biometric Monitoring	SteadyMD, Inc.	United States	Touchdown Ventures Inc.	-
5/3/2023	In Vitro In Vivo Diagnostics	Chemistry Biometric Monitoring	DarioHealth Corp. (NasdaqCM:DRIO)	United States	Undisclosed	14.3
5/1/2023	In Vivo Diagnostics	Imaging Diagnostics	Toku Eyes Limited	New Zealand	Undisclosed	3.2

PUBLIC MARKETS¹

IN VITRO DIAGNOSTICS

Molecular Diagnostics

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Amoy Diagnostics Co., Ltd.	China	1,373	11.8x	9.0x	51.3x	32.4x
Applied BioCode Corporation	United States	50	3.7x	3.3x	NM	NM
Biocartis Group NV	Belgium	159	2.6x	NM	NM	NM
Dx & Vx Co., Ltd. (KOSDAQ:A180400)	Korea (Republic of)	204	7.6x	NM	NM	NM
Genomictree Inc.	Korea (Republic of)	157	35.8x	NM	NM	NM
Guangdong HybriBio Biotech Co.,Ltd.	Hong Kong	719	1.2x	NM	2.6x	NM
Qiagen N.V.	Netherlands	10,926	5.5x	5.2x	19.2x	15.0x
Sansure Biotech Inc.	China	710	1.0x	NM	3.3x	NM
Seegene, Inc.	Korea (Republic of)	546	1.5x	1.9x	20.6x	9.0x
Tellgen Corporation	China	420	4.3x	3.3x	19.0x	10.7x
Zhejiang Orient Gene Biotech Co., Ltd. (SHSE:688298)	China	420	0.7x	NM	NM	NM
Mean		1,426	6.9x	4.5x	19.3x	16.8x
Median		420	3.7x	3.3x	19.1x	12.8x

Microbiology

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Accelerate Diagnostics, Inc.	United States	116	9.2x	7.0x	NM	NM
bioMérieux S.A.	France	11,759	3.1x	3.0x	13.1x	13.2x
OraSure Technologies, Inc. (NasdaqGS:OSUR)	United States	268	0.6x	1.3x	4.9x	NM
QuidelOrtho Corporation	United States	8,052	2.6x	2.7x	8.8x	9.7x
Sansure Biotech Inc.	China	710	1.0x	NM	3.3x	NM
T2 Biosystems, Inc.	United States	51	3.0x	3.3x	NM	NM
Mean		3,493	3.2x	3.5x	7.5x	11.5x
Median		489	2.8x	3.0x	6.8x	11.5x

Histology & Cytology

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Guangzhou LBP Medicine Science & Technology Co., Ltd.	China	298	4.4x	NM	56.0x	NM
Mean		298	4.4x	NM	56.0x	NM
Median		298	4.4x	NM	56.0x	NM

Hematology & Coagulation

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Beijing Succeeder Technology Inc.	China	419	12.1x	NM	30.6x	NM
Quotient Limited	Switzerland	285	7.6x	NM	NM	NM
Sysmex Corporation	Japan	13,335	4.5x	4.2x	17.8x	15.9x
Mean		4,680	8.1x	4.2x	24.2x	15.9x

DIAGNOSTIC SERVICES

Diagnostic Imaging

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Akumin Inc. (TSX:AKU)	United States	1,656	2.2x	2.1x	8.4x	10.3x
Centro de Imagem Diagnósticos S.A.	Brazil	764	3.6x	NM	43.9x	NM
Integral Diagnostics Limited (ASX:IDX)	Australia	716	2.8x	2.4x	14.7x	11.8x
Medica Group Plc (LSE:MGP)	United Kingdom	321	3.4x	3.0x	20.3x	14.0x
RadNet, Inc. (NasdaqGM:RDNT)	United States	3,313	2.2x	2.1x	10.7x	14.8x
Mean		1,354	2.8x	2.4x	19.6x	12.7x
Median		764	2.8x	2.3x	14.7x	12.9x

Specialized Testing

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Adaptive Biotechnologies Corporation	United States	796	4.3x	3.6x	NM	NM
BGI Genomics Co., Ltd.	China	2,551	2.8x	NM	19.6x	NM
Burning Rock Biotech Limited	China	159	1.9x	1.6x	NM	NM
CareDx, Inc (NasdaqGM:CDNA)	United States	181	0.6x	0.7x	NM	NM
Castle Biosciences, Inc. (NasdaqGM:CSTL)	United States	433	2.8x	2.3x	NM	NM
Dx & Vx Co., Ltd. (KOSDAQ:A180400)	Korea (Republic of)	204	7.6x	NM	NM	NM
Exact Sciences Corporation	United States	16,599	7.5x	6.7x	NM	NM
Fulgent Genetics, Inc. (NasdaqGM:FLGT)	United States	350	1.0x	1.3x	50.8x	NM
Genetron Holdings Limited	China	57	0.6x	NM	NM	NM
Guardant Health, Inc.	United States	3,864	8.0x	6.9x	NM	NM
Invitae Corporation	United States	1,520	3.0x	3.0x	NM	NM
MDxHealth SA	Belgium	89	2.0x	1.3x	NM	NM
Myriad Genetics, Inc. (NasdaqGS:MYGN)	United States	1,852	2.7x	2.5x	NM	NM
Natera, Inc.	United States	5,018	5.8x	4.7x	NM	NM
NeoGenomics, Inc.	United States	2,384	4.5x	4.2x	NM	NM
Progenity, Inc. (NasdaqGM:PROG)	United States	154	NM	NM	NM	NM
Sema4 Holdings Corp.	United States	66	0.3x	0.3x	NM	NM
Veracyte, Inc.	United States	1,710	5.5x	5.0x	NM	NM
Mean		2,110	3.6x	3.1x	35.2x	NM
Median		615	2.8x	2.7x	35.2x	NM

General Chemistry

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Diagnósticos da América S.A. (BOVESPA:DASA3)	Brazil	4,090	1.5x	1.4x	10.6x	7.4x
Dr. Lal PathLabs Limited (NSEI:LALPATHLAB)	India	1,992	8.2x	7.3x	33.6x	29.0x
Guangzhou Kingmed Diagnostics Group Co., Ltd.	China	4,241	2.3x	2.9x	10.5x	14.5x
H.U. Group Holdings, Inc.	Japan	1,308	0.7x	0.8x	4.4x	5.2x
Integrated Diagnostics Holdings plc	Jersey	298	2.1x	2.3x	6.5x	6.3x

Laboratory Corporation of America Holdings	United States	24,814	1.7x	1.6x	9.6x	9.6x
Medicover AB (publ) (OM:MCOV B)	Sweden	3,201	2.0x	1.7x	16.0x	11.7x
Metropolis Healthcare Limited (NSEI:METROPOLIS)	India	825	5.9x	5.5x	23.7x	21.8x
Quest Diagnostics Incorporated	United States	19,420	2.0x	2.2x	9.0x	10.8x
Sonic Healthcare Limited	Australia	12,296	2.2x	2.3x	8.8x	10.5x
Thyrocare Technologies Limited	India	274	4.3x	3.7x	18.7x	15.1x
Mean		6,614	3.0x	2.9x	13.8x	12.9x
Median		3,201	2.1x	2.3x	10.5x	10.8x

LIFE SCIENCE TOOLS

Laboratory Software

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Precigen, Inc. (NasdaqGS:PGEN)	United States	222	9.5x	27.2x	NM	NM
Schrödinger, Inc.	United States	1,981	10.1x	8.6x	68.5x	NM
Simulations Plus, Inc.	United States	769	14.1x	12.1x	57.7x	36.0x
SyntekaBio, Inc.	Korea (Republic of)	68	NM	NM	NM	NM
Mean		760	11.2x	16.0x	63.1x	36.0x
Median		496	10.1x	12.1x	63.1x	36.0x

Life Sciences Consumables

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Guangzhou Jet Bio-Filtration Co., Ltd. (SHSE:688026)	China	335	4.8x	4.3x	27.6x	25.9x
Abcam plc	United Kingdom	3,868	8.9x	7.3x	32.9x	21.3x
Abnova (Taiwan) Corporation	Taiwan (Province of China)	59	4.4x	NM	19.8x	NM
Adaptive Biotechnologies Corporation	United States	796	4.3x	3.6x	NM	NM
Avantor, Inc.	United States	19,209	2.6x	2.6x	12.7x	12.5x
Bio-Techne Corporation	United States	13,194	11.7x	10.6x	36.3x	26.6x
Bioneer Corporation	Korea (Republic of)	1,009	6.3x	NM	NM	NM
Borosil Limited (BSE:543212)	India	582	4.7x	NM	38.1x	NM
Cellectis S.A.	France	107	4.3x	4.6x	NM	NM
Genscript Biotech Corporation	China	4,232	6.8x	5.1x	NM	NM
Guerbet SA (ENXTPA:GBT)	France	512	0.6x	0.6x	4.8x	4.9x
NKMAX CO., Ltd.	Korea (Republic of)	454	56.0x	NM	NM	NM
Porton Pharma Solutions Ltd.	China	2,198	2.2x	3.3x	6.6x	11.1x
Qiagen N.V.	Netherlands	10,926	5.5x	5.2x	19.2x	15.0x
Repligen Corporation (NasdaqGS:RGEN)	United States	9,152	11.8x	12.1x	35.2x	46.2x
Twist Bioscience Corporation	United States	569	2.5x	2.2x	NM	NM
Vitrolife AB (publ)	Sweden	2,794	9.1x	8.1x	28.9x	23.6x
Viva Biotech Holdings	China	683	2.0x	1.9x	10.5x	9.9x
Mean		3,927	8.3x	5.1x	22.7x	19.7x

Median		903	4.8x	4.4x	23.7x	18.1x
Instrumentation						
Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
10x Genomics, Inc.	United States	5,779	10.8x	9.2x	NM	NM
AnHui Wanyi Science and Technology Co., Ltd.	China	427	4.4x	2.9x	NM	20.1x
Applied BioCode Corporation	United States	50	3.7x	3.3x	NM	NM
Biotage AB (publ) (OM:BIOT)	Sweden	835	5.9x	5.0x	25.4x	18.8x
Bruker Corporation	United States	10,797	4.1x	3.7x	18.0x	16.7x
Harvard Bioscience, Inc.	United States	283	2.5x	2.3x	36.9x	14.2x
Illumina, Inc.	United States	32,625	7.3x	6.3x	67.5x	52.9x
Mettler-Toledo International Inc.	United States	31,142	7.9x	7.5x	24.3x	22.4x
NanoString Technologies, Inc.	United States	374	2.8x	2.0x	NM	NM
Pacific Biosciences of California, Inc.	United States	3,165	23.6x	16.4x	NM	NM
PhenomeX Inc.	United States	117	1.5x	1.4x	NM	NM
Quanterix Corporation (NasdaqGM:QTRX)	United States	449	4.3x	4.1x	NM	NM
Standard BioTools Inc.	United States	443	4.6x	NM	NM	NM
Waters Corporation	United States	15,917	5.4x	5.0x	15.6x	14.1x
Mean		7,315	6.3x	5.3x	31.3x	22.7x
Median		642	4.5x	4.1x	24.9x	18.8x

Lab/Biobank Equipment						
Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
BICO Group AB (publ)	Sweden	457	2.0x	2.0x	NM	28.3x
Sartorius Aktiengesellschaft	Germany	23,938	5.5x	5.2x	16.8x	15.6x
Stratec SE	Germany	800	2.9x	2.5x	16.5x	11.7x
Tecan Group Ltd. (SWX:TECN)	Switzerland	4,891	3.9x	3.8x	22.1x	19.8x
Mean		7,522	3.6x	3.4x	18.5x	18.8x
Median		2,846	3.4x	3.1x	16.8x	17.7x

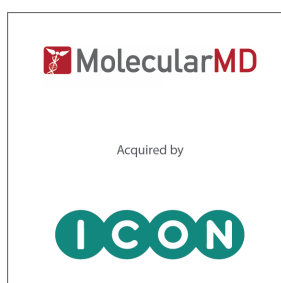
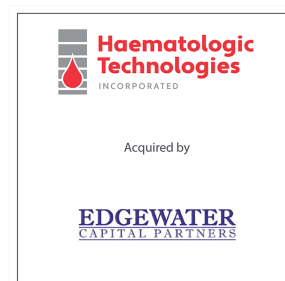
IN VIVO DIAGNOSTICS						
Biometric Monitoring						
Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Biotricity, Inc.	United States	55	6.0x	4.3x	NM	NM
Contec Medical Systems Co.,Ltd	China	1,494	11.8x	NM	45.7x	NM
Guangdong Transtek Medical Electronics Co., Ltd	China	241	1.8x	NM	NM	NM
iRhythm Technologies, Inc.	United States	3,437	8.0x	6.8x	NM	NM
TaiDoc Technology Corporation	Taiwan (Province of China)	425	1.4x	2.2x	3.2x	7.0x
Zhejiang Starry Pharmaceutical Co.,Ltd. (SHSE:603520)	China	1,139	3.7x	3.3x	33.9x	14.0x

Mean		1,132	5.5x	4.1x	27.6x	10.5x
Median		782	4.9x	3.8x	33.9x	10.5x
Imaging Diagnostics						
Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
4DMedical Limited	Australia	132	NM	20.9x	NM	NM
Detection Technology Oyj	Finland	268	2.6x	2.1x	29.9x	13.2x
iRay Technology Company Limited	China	3,810	16.3x	12.4x	46.2x	28.9x
Kromek Group plc	United Kingdom	57	3.2x	2.4x	NM	NM
Nano-X Imaging Ltd. (NasdaqGM:NNOX)	Israel	895	NM	48.3x	NM	NM
Perimeter Medical Imaging AI, Inc.	Canada	63	NM	65.4x	NM	NM
Ray Co., Ltd.	Korea (Republic of)	448	4.5x	3.1x	29.7x	16.0x
Siemens Healthineers AG	Germany	79,064	3.4x	3.3x	21.9x	16.8x
SonoScape Medical Corp.	China	3,307	12.6x	9.7x	52.1x	34.6x
Varex Imaging Corporation (NasdaqGS:VREX)	United States	1,263	1.4x	1.4x	11.2x	8.9x
Mean		8,931	6.3x	16.9x	31.8x	19.7x
Median		672	3.4x	6.5x	29.8x	16.4x

1. NM - Not Meaningful

RECENT CROSSTREE TRANSACTIONS

Crosstree Capital Partners provides mergers and acquisitions and financing advisory services exclusively to leading Health Sciences companies. Since inception, the firm has been a consistent leader within our focus areas, closing more than 100 successful transactions with companies ranging from private equity-backed consolidators to Fortune 500 publicly-traded companies. In the process, we have represented clients on five continents, and roughly 35% of our transactions have been cross-border.



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