

Industry BlueBook

Diagnostics & Tools

December 2022

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

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

EV MULTIPLES

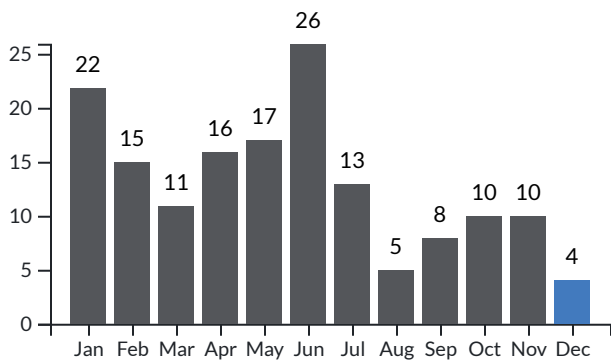
	REVENUE				EBITDA			
	LTM	%Δ	FTM	%Δ	LTM	%Δ	FTM	%Δ
In Vitro Diagnostics	3.6x	-1%	3.6x	-11%	13.7x	-1%	14.1x	-3%
Diagnostic Services	2.4x	-2%	2.3x	2%	11.0x	2%	10.3x	-2%
Life Science Tools	4.5x	-8%	4.6x	-13%	27.6x	-3%	21.7x	1%
In Vivo Diagnostics	4.2x	4%	3.5x	-1%	20.1x	-11%	12.6x	-13%

M&A DEALS & FINANCINGS

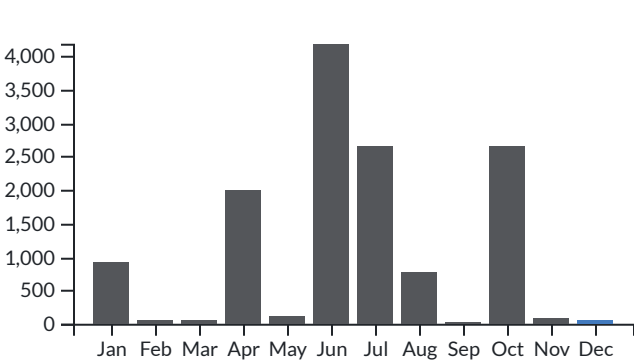
	DEAL COUNT				VOLUME (\$MM)			
	M&A	%Δ	FINANCINGS	%Δ	M&A	%Δ	FINANCINGS	%Δ
In Vitro Diagnostics	0	NM	2	-67%	0	NM	12	-71%
Diagnostic Services	3	-40%	2	-60%	73	80%	31	-2%
Life Science Tools	1	-67%	4	33%	0	NM	33	-5%
In Vivo Diagnostics	0	NM	7	-22%	0	NM	111	99%

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

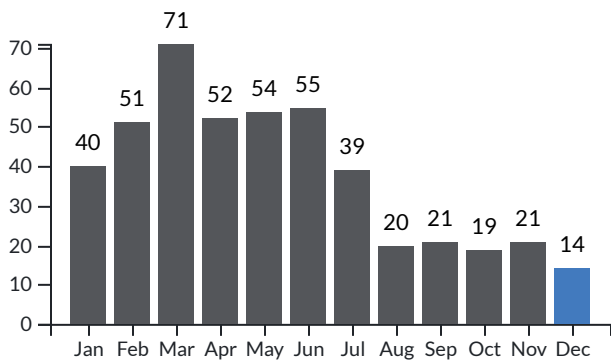
12 Month Deal Count M&A



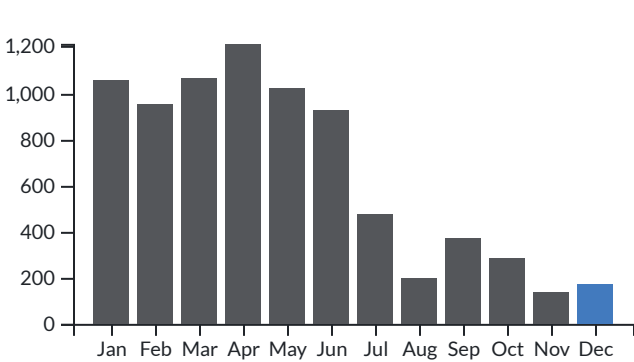
12 Month Volume M&A (\$MM)



12 Month Deal Count Financings

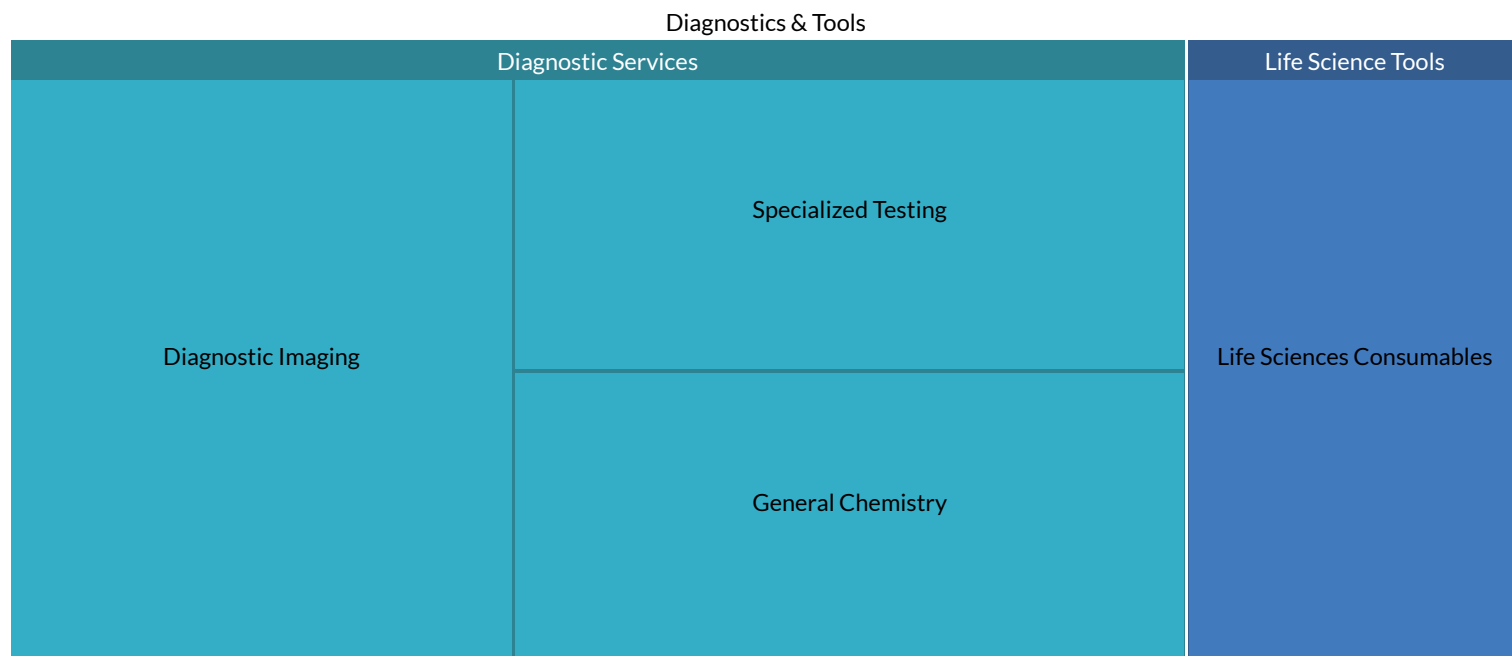


12 Month Volume Financings (\$MM)

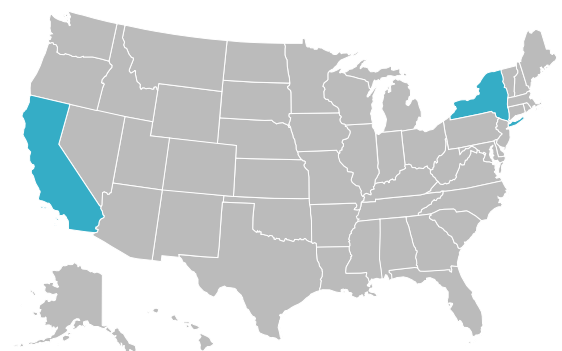


M&A ACTIVITY

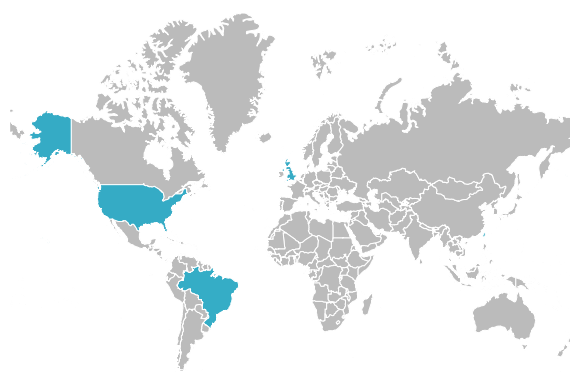
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY

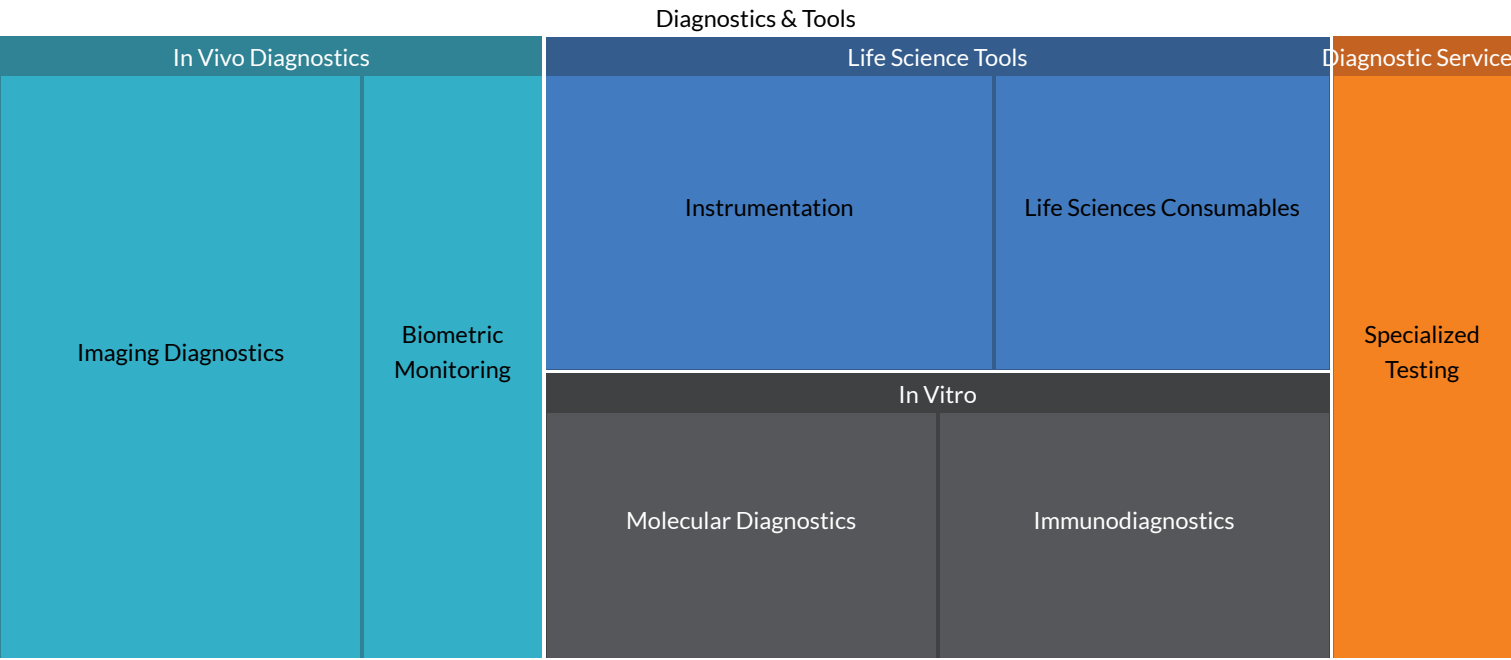


SELECTED TRANSACTIONS

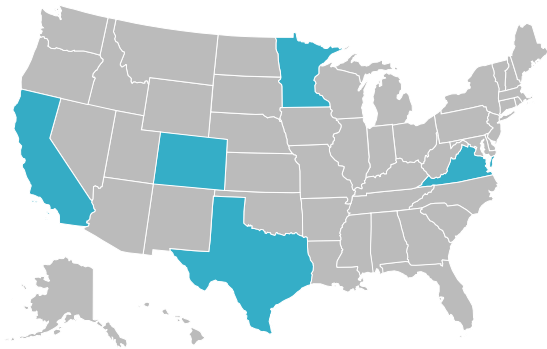
Announced Date	Segment	Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
12/20/2022	Life Science Tools	Consumables	Carvalhaes Produtos Para Laboratório LTDA	Brazil	Calibre Scientific, Inc.	-
12/19/2022	Diagnostic Services	Diagnostic Imaging General Chemistry	The Doctors Clinic Group Ltd	United Kingdom	Spire Healthcare Group plc (LSE:SPI)	14.6
12/16/2022	Diagnostic Services	Specialized Testing	ACT Genomics Co., Ltd.	Taiwan (Province of China)	Prenetics Global Limited (NasdaqGM:PRE)	58.4
12/12/2022	Diagnostic Services	Diagnostic Imaging	CNY Diagnostic Imaging Associates, LLC	United States	Rezolut, LLC	-

FINANCINGS

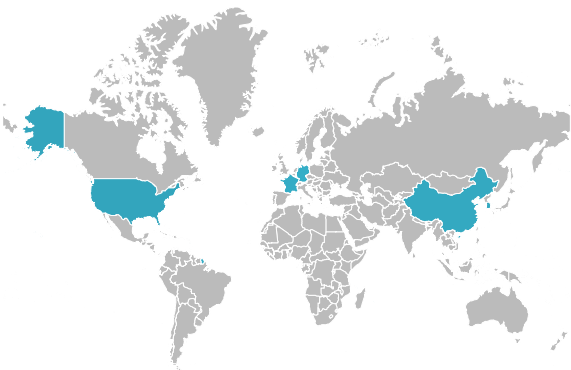
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY



SELECTED TRANSACTIONS						
Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
12/29/2022	In Vitro Life Science Tools	Molecular Immunodiagnostics Instrumentation	PCL, Inc. (KOSDAQ:A241820)	Korea (Republic of)	Hyeopsim Co., Ltd.	2.4
12/27/2022	Diagnostic Services	Specialized Testing	Beijing AcornMed Biotechnology Co., Ltd.	China	Changzhou Lichen Investment Co., Ltd., Shenzhen Qianhai Wushi Capital Management Co., Ltd., Qingdao Hongteng Investment, Yikai Ventures	29.0

Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
12/21/2022	In Vivo Diagnostics	Imaging Diagnostics	iThera Medical GmbH.	Germany	Bayern Kapital GmbH, BayBG Bayerische Beteiligungsgesellschaft mbH, Mey Capital Matrix GmbH, Occident Group AG, Falk Strascheg Holding GmbH, Fluxunit GmbH, Fluxunit GmbH	13.8
12/20/2022	In Vivo Diagnostics	Imaging Diagnostics	Sonio SAS	France	European Innovation Council Accelerator	8.0
12/19/2022	In Vivo Diagnostics	Imaging Diagnostics	Shenzhen InnerMedical Medical Technology Co., Ltd.	China	Green Pine Capital Partners Co., Ltd., Hangzhou Simiao Equity Investment Co., Ltd., Dice Investment, Zhoushan Chengshang Investment Management Partnership (Limited Partnership), Beijing Costone Capital Management Co., Ltd., Hangzhou Simiao Equity Investment Co., Ltd., China Guoxin Fund Management Co., Ltd.	43.0
12/16/2022	Diagnostic Services	Specialized Testing	Clinomics Inc. (KOSDAQ:A352770)	Korea (Republic of)	Undisclosed	2.3
12/15/2022	In Vivo Diagnostics	Biometric Monitoring	Neuracle Technology (Changzhou) Co., Ltd.	China	Green Pine Capital Partners Co., Ltd.	28.0
12/14/2022	Life Science Tools	Instrumentation	BrightSpec, Inc.	United States	Arboretum Ventures LLC, UVA Licensing & Ventures Group, Kingfisher Securities, LLC, ENIAC Ventures, Felton Group, LLC	18.4
12/12/2022	In Vitro Life Science Tools	Molecular Immunodiagnostics Instrumentation	PCL, Inc. (KOSDAQ:A241820)	Korea (Republic of)	Undisclosed	9.2
12/8/2022	In Vivo Diagnostics	Biometric Monitoring	Sêmeia SAS	France	Orange Ventures, Banque des Territoires, Mh Innov's.L.P	8.4
12/8/2022	In Vivo Diagnostics	Imaging Diagnostics	Vuno Inc. (KOSDAQ:A338220)	Korea (Republic of)	Undisclosed	7.6
12/7/2022	In Vivo Diagnostics	Imaging Diagnostics	RETINA-AI Health, Inc.	United States	Undisclosed	2.6
12/5/2022	Life Science Tools	Consumables	Suzhou Hongxun Biotechnologies Co.,Ltd.	China	Addor Capital, Zhongke Angel Fund	2.8

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	1,429	11.3x	11.4x	51.4x	28.8x
Applied BioCode Corporation	United States	54	4.4x	NM	NM	NM
Biocartis Group NV (ENXTBR:BCART)	Belgium	188	3.0x	NM	NM	NM
Genomictree Inc.	Korea (Republic of)	71	2.9x	NM	12.6x	NM
Guangdong HybriBio Biotech Co.,Ltd.	Hong Kong	988	1.4x	1.2x	2.9x	NM
Oncimmune Holdings plc	United Kingdom	62	13.3x	NM	NM	NM
Qiagen Genomics, Inc.	Netherlands	11,758	5.3x	5.9x	15.6x	16.2x
Sansure Biotech Inc.	China	1,075	1.4x	NM	3.1x	NM
Seegene, Inc.	Korea (Republic of)	701	0.8x	1.4x	2.1x	4.6x
Tellgen Corporation	China	420	4.0x	3.6x	18.1x	10.8x
Zhejiang Orient Gene Biotech Co., Ltd. (SHSE:688298)	China	859	0.6x	NM	1.3x	NM
Mean		1,600	4.4x	4.7x	13.4x	15.1x
Median		701	3.0x	3.6x	7.9x	13.5x
Microbiology						
Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Accelerate Diagnostics, Inc.	United States	91	7.0x	6.0x	NM	NM
bioMérieux S.A. (ENXTPA:BIM)	France	12,508	3.4x	3.3x	12.1x	13.7x
Meridian Bioscience, Inc.	United States	1,405	4.2x	4.9x	14.9x	NM
OraSure Technologies, Inc. (NasdaqGS:OSUR)	United States	267	0.8x	1.0x	NM	41.1x
Quidel Corporation (NasdaqGS:QDEL)	United States	8,252	2.7x	2.9x	5.7x	10.7x
Sansure Biotech Inc.	China	1,075	1.4x	NM	3.1x	NM
T2 Biosystems, Inc.	United States	51	2.2x	2.0x	NM	NM
Mean		3,378	3.1x	3.3x	8.9x	21.8x
Median		1,075	2.7x	3.1x	8.9x	13.7x
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	251	3.6x	NM	35.2x	NM
Mean		251	3.6x	NM	35.2x	NM
Median		251	3.6x	NM	35.2x	NM
Hematology & Coagulation						
Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Beijing Succeder Technology Inc.	China	203	5.8x	NM	14.9x	NM
Quotient Sciences	Switzerland	252	6.7x	5.6x	NM	NM
Sysmex Corporation (TSE:6869)	Japan	12,340	4.2x	3.7x	17.3x	14.4x

Mean	4,265	5.6x	4.7x	16.1x	14.4x
Median	252	5.8x	4.7x	16.1x	14.4x

DIAGNOSTIC SERVICES

Diagnostic Imaging

Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Akumin Inc. (TSX:AKU)	United States	1,698	2.3x	2.3x	9.9x	10.1x
Centro de Imagem Diagnósticos S.A.	Brazil	670	3.2x	NM	34.6x	NM
Integral Diagnostics Limited (ASX:IDX)	Australia	612	2.5x	2.1x	12.0x	9.8x
Medica Group Plc (LSE:MGP)	United Kingdom	208	2.4x	2.3x	11.8x	10.7x
RadNet, Inc. (NasdaqGM:RDNT)	United States	2,569	1.9x	1.8x	8.7x	12.2x
Mean		1,151	2.5x	2.1x	15.4x	10.7x
Median		670	2.4x	2.2x	11.8x	10.4x

Specialized Testing

Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Adaptive Biotechnologies Corporation	United States	674	4.0x	3.2x	NM	NM
BGI Genomics Co., Ltd.	China	2,111	2.4x	NM	12.2x	NM
BioNexus Gene Lab Corporation	Malaysia	164	14.4x	NM	NM	NM
Burning Rock Biotech Limited	China	103	1.3x	1.1x	NM	NM
CareDx, Inc (NasdaqGM:CDNA)	United States	356	1.1x	1.0x	NM	NM
Castle Biosciences, Inc. (NasdaqGM:CSTL)	United States	368	3.0x	2.3x	NM	NM
Exact Sciences	United States	10,585	5.3x	4.8x	NM	NM
Genetron Holdings Limited	China	55	0.7x	0.6x	NM	NM
Invitae Corporation	United States	1,618	3.1x	3.2x	NM	NM
MDxHealth SA	Belgium	76	2.3x	1.3x	NM	NM
Myriad Genetics, Inc. (NasdaqGS:MYGN)	United States	1,054	1.6x	1.5x	74.2x	NM
Natera, Inc.	United States	4,275	5.5x	4.6x	NM	NM
NeoGenomics, Inc.	United States	1,335	2.7x	2.5x	NM	NM
Oncimmune Holdings plc	United Kingdom	62	13.3x	NM	NM	NM
Progenity, Inc. (NasdaqGM:PROG)	United States	123	NM	NM	NM	NM
Veracyte, Inc. (NasdaqGM:VCYT)	United States	1,550	5.5x	4.9x	NM	NM
Mean		1,532	4.4x	2.6x	43.2x	NM
Median		521	3.0x	2.4x	43.2x	NM

General Chemistry

Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Diagnósticos da América S.A. (BOVESPA:DASA3)	Brazil	3,655	1.5x	1.4x	11.0x	7.1x
Dr. Lal PathLabs Limited (NSEI:LALPATHLAB)	India	2,234	9.2x	8.2x	38.0x	32.1x
Guangzhou Kingmed Diagnostics Group Co., Ltd.	China	5,018	2.2x	2.8x	8.6x	9.6x
H.U. Group Holdings, Inc.	Japan	1,382	0.7x	0.7x	3.3x	4.1x
Instituto Hermes Pardini S.A.	Brazil	608	1.6x	1.5x	8.2x	6.6x
Integrated Diagnostics Holdings plc	Jersey	408	1.9x	2.6x	5.3x	7.0x

LabCorp	United States	26,826	1.8x	1.8x	7.8x	10.4x
Medicover AB (publ) (OM:MCOV B)	Sweden	2,880	1.9x	1.7x	11.4x	10.8x
Metropolis Healthcare Limited (NSEI:METROPOLIS)	India	842	5.9x	5.5x	23.8x	21.0x
Quest Diagnostics Incorporated	United States	21,871	2.1x	2.4x	8.1x	12.3x
Sonic Healthcare Limited	Australia	11,330	1.8x	2.1x	6.0x	9.1x
Thyrocare Technologies Limited	India	385	6.2x	5.6x	22.3x	20.5x
Mean		6,453	3.1x	3.0x	12.8x	12.5x
Median		2,557	1.9x	2.2x	8.4x	10.0x

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	336	2.8x	13.5x	NM	NM
Schrödinger, Inc. (NasdaqGS:SDGR)	United States	954	5.6x	4.5x	NM	NM
Simulations Plus, Inc.	United States	616	11.4x	10.1x	34.4x	31.6x
SyntekaBio, Inc.	Korea (Republic of)	69	NM	NM	NM	NM
Mean		494	6.6x	9.4x	34.4x	31.6x
Median		476	5.6x	10.1x	34.4x	31.6x

Life Sciences Consumables

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Abcam plc	United Kingdom	3,708	8.7x	7.4x	35.1x	22.7x
Abnova (Taiwan) Corporation	Taiwan (Province of China)	70	5.4x	NM	32.6x	NM
Adaptive Biotechnologies Corporation	United States	674	4.0x	3.2x	NM	NM
Avantor, Inc.	United States	20,116	2.6x	2.7x	12.2x	12.9x
Bio-Techne	United States	13,148	11.8x	10.7x	34.9x	27.4x
Bioneer Corporation	Korea (Republic of)	562	3.2x	2.6x	24.9x	NM
Borosil Limited (BSE:543212)	India	505	4.3x	NM	28.2x	NM
Cellectis S.A.	France	75	3.1x	1.6x	NM	NM
Genscript Biotech Corporation	China	6,114	10.4x	8.7x	NM	NM
Guangzhou Jet Bio-Filtration Co., Ltd.	China	456	4.5x	4.2x	17.0x	NM
Guerbet SA (ENXTPA:GBT)	France	498	0.6x	0.6x	6.7x	4.5x
NKMAX CO., Ltd.	Korea (Republic of)	465	50.0x	NM	NM	NM
PanGen Biotech Inc.	Korea (Republic of)	54	9.7x	NM	NM	NM
Porton Pharma Solutions Ltd. (SZSE:300363)	China	2,986	3.3x	3.0x	9.8x	9.0x
Qiagen Genomics, Inc.	Netherlands	11,758	5.3x	5.9x	15.6x	16.2x
Repligen Corporation (NasdaqGS:RGEN)	United States	9,246	11.5x	11.8x	33.0x	40.0x
Twist Bioscience Corporation (NasdaqGS:TWST)	United States	937	4.6x	3.5x	NM	NM
Vitrolife AB (publ) (OM:VITR)	Sweden	2,588	9.3x	7.6x	28.8x	22.4x
Viva Biotech Holdings	China	744	2.3x	NM	13.6x	NM
Mean		3,932	8.1x	5.2x	22.5x	19.4x
Median		744	4.6x	3.9x	24.9x	19.3x

Instrumentation

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
10x Genomics, Inc.	United States	3,815	7.6x	6.5x	NM	NM
AnHui Wanyi Science and Technology Co., Ltd.	China	430	4.5x	NM	74.6x	NM
Applied BioCode Corporation	United States	54	4.4x	NM	NM	NM
Berkeley Lights, Inc.	United States	96	1.2x	1.0x	NM	NM
Biotage AB (publ) (OM:BIOT)	Sweden	1,161	7.9x	6.8x	31.3x	24.4x
Bruker Corporation (NasdaqGS:BRKR)	United States	10,588	4.2x	4.2x	18.7x	17.9x
Harvard Bioscience, Inc.	United States	167	1.4x	1.4x	32.1x	11.9x
Illumina, Inc.	United States	33,331	7.1x	7.0x	50.5x	43.6x
Mettler-Toledo International Inc.	United States	34,082	8.7x	8.8x	28.0x	26.2x
NanoString Technologies, Inc.	United States	393	2.9x	2.5x	NM	NM
Pacific Biosciences of California, Inc.	United States	1,964	14.3x	13.4x	NM	NM
Quanterix Corporation (NasdaqGM:QTRX)	United States	212	1.9x	2.0x	NM	NM
Standard BioTools Inc.	United States	322	3.0x	NM	NM	NM
Waters Corporation	United States	21,538	7.3x	7.2x	21.0x	21.0x
Mean		7,725	5.5x	5.5x	36.6x	24.2x
Median		796	4.5x	6.5x	31.3x	22.7x

Lab/Biobank Equipment

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
BICO Group AB (publ) (OM:BICO)	Sweden	829	3.7x	3.8x	NM	NM
Sartorius Aktiengesellschaft (XTRA:SRT)	Germany	28,912	6.7x	6.1x	20.5x	18.2x
Stratec SE	Germany	1,096	3.8x	3.4x	18.5x	14.3x
Tecan Group Ltd. (SWX:TECN)	Switzerland	5,739	4.9x	4.6x	27.2x	22.6x
Mean		9,144	4.8x	4.5x	22.1x	18.4x
Median		3,418	4.4x	4.2x	20.5x	18.2x

IN VIVO DIAGNOSTICS

Biometric Monitoring

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Contec Medical Systems Co.,Ltd	China	1,879	19.9x	NM	NM	NM
Guangdong Transtek Medical Electronics Co., Ltd	China	286	1.4x	NM	NM	NM
iRhythm Technologies, Inc.	United States	2,746	7.2x	5.9x	NM	NM
TaiDoc Technology Corporation	Taiwan (Province of China)	477	1.6x	2.2x	3.6x	5.7x
Zhejiang Starry Pharmaceutical Co.,Ltd. (SHSE:603520)	China	1,264	4.2x	3.9x	22.3x	15.8x
Mean		1,330	6.9x	4.0x	12.9x	10.7x
Median		1,264	4.2x	3.9x	12.9x	10.7x

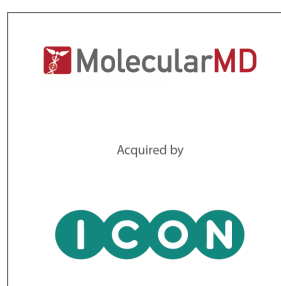
Imaging Diagnostics

Company Name	Geography	Enterprise Value	xRevenue	xEBITDA
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		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Siemens Healthineers AG (XTRA:SHL)	Germany	72,184	3.1x	3.1x	16.3x	15.8x
4DMedical Limited	Australia	54	74.8x	16.1x	NM	NM
Detection Technology Oyj	Finland	241	2.5x	2.0x	20.1x	12.6x
iRay Technology Company Limited	China	4,594	21.6x	16.5x	60.4x	38.3x
Kromek Group plc	United Kingdom	65	4.5x	NM	NM	NM
Nano-X Imaging Ltd. (NasdaqGM:NNOX)	Israel	274	35.3x	16.3x	NM	NM
Ray Co., Ltd.	Korea (Republic of)	297	3.5x	2.3x	63.3x	10.0x
Rayence Co., Ltd.	Korea (Republic of)	52	0.5x	0.4x	2.1x	1.9x
SonoScape Medical Corp.	China	3,202	12.6x	12.7x	60.5x	48.3x
Varex Imaging Corporation (NasdaqGS:VREX)	United States	1,174	1.4x	1.3x	9.3x	7.9x
Mean		8,214	16.0x	7.8x	33.1x	19.2x
Median		286	4.0x	3.1x	20.1x	12.6x

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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