

Industry BlueBook

Diagnostics & Tools

October 2023

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

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

EV MULTIPLES

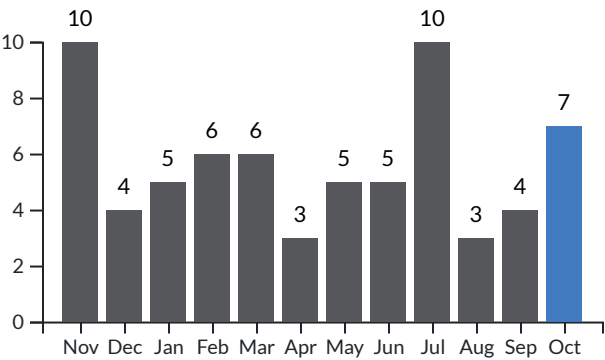
	REVENUE				EBITDA			
	LTM	%Δ	FTM	%Δ	LTM	%Δ	FTM	%Δ
In Vitro Diagnostics	3.8x	2%	3.8x	24%	15.1x	-4%	12.4x	4%
Diagnostic Services	2.2x	-2%	2.0x	-5%	10.8x	-4%	10.6x	2%
Life Science Tools	4.4x	-8%	4.5x	-1%	19.5x	-6%	14.9x	-10%
In Vivo Diagnostics	3.1x	-6%	3.0x	-4%	19.9x	-3%	14.8x	1%
Digital Detection and Diagnosis	NM	NM	NM	NM	NM	NM	NM	NM

M&A DEALS & FINANCINGS

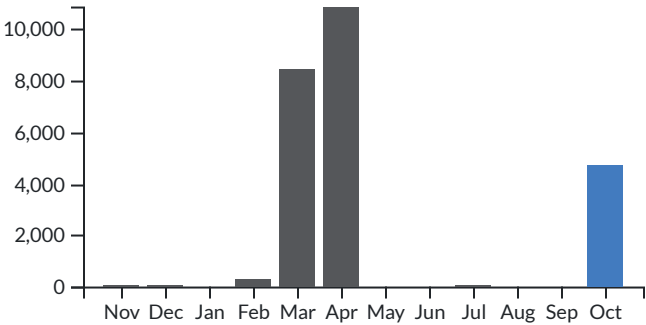
	DEAL COUNT				VOLUME (\$MM)			
	M&A	%Δ	FINANCINGS	%Δ	M&A	%Δ	FINANCINGS	%Δ
In Vitro Diagnostics	1	0%	3	-25%	151	NM	4	-95%
Diagnostic Services	3	NM	8	33%	872	NM	37	-83%
Life Science Tools	2	-33%	8	14%	3,850	NM	184	69%
In Vivo Diagnostics	3	NM	7	40%	0	NM	30	-3%
Digital Detection and Diagnosis	0	NM	1	NM	0	NM	3	NM

- 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

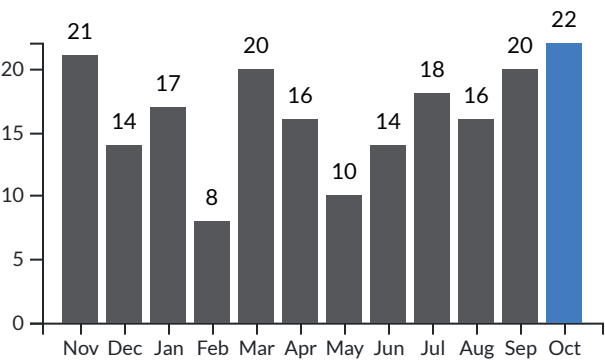
12 Month Deal Count M&A



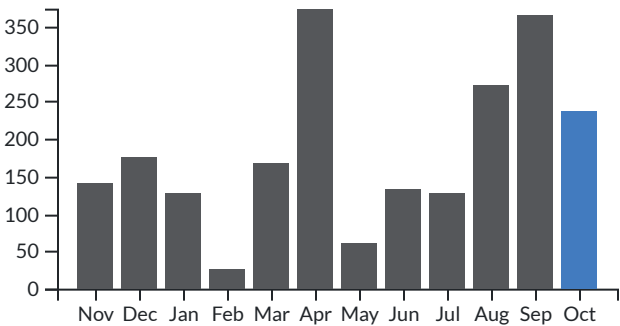
12 Month Volume M&A (\$MM)



12 Month Deal Count Financings

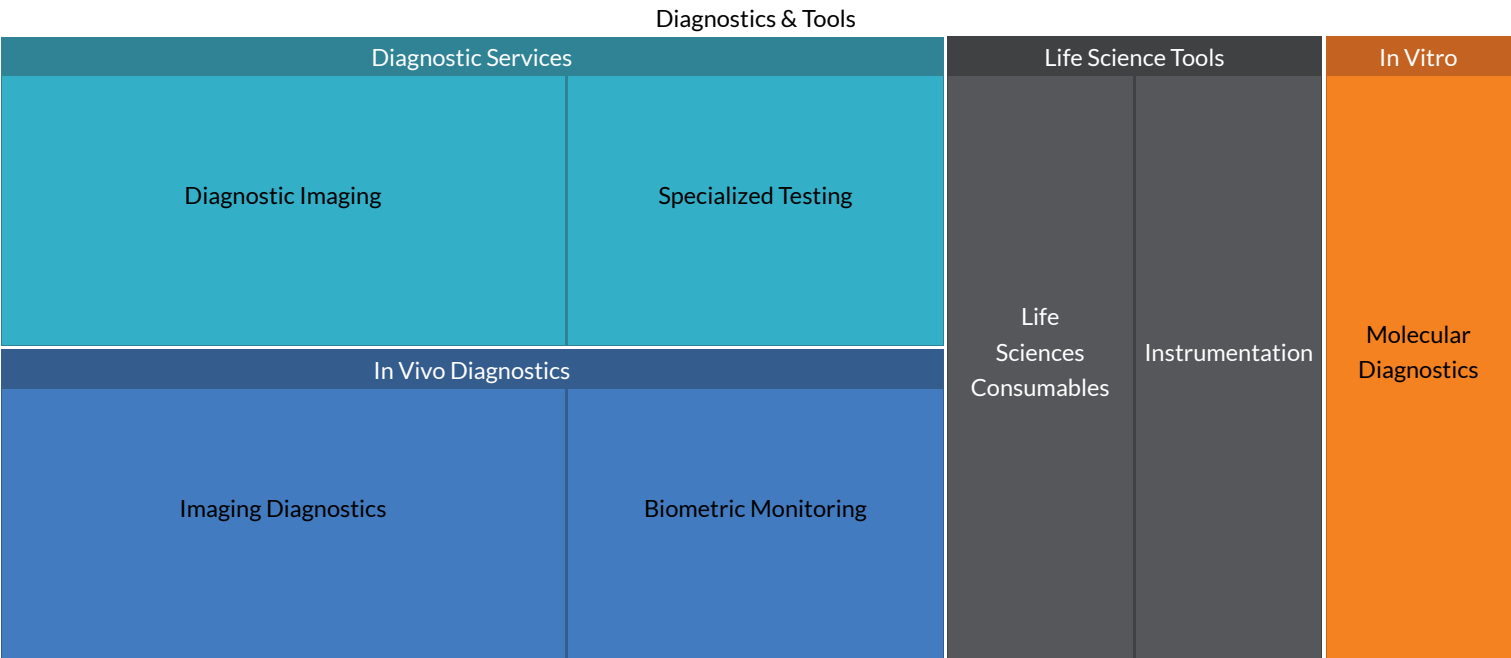


12 Month Volume Financings (\$MM)

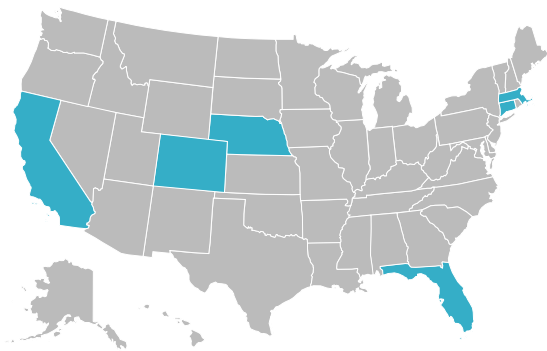


M&A ACTIVITY

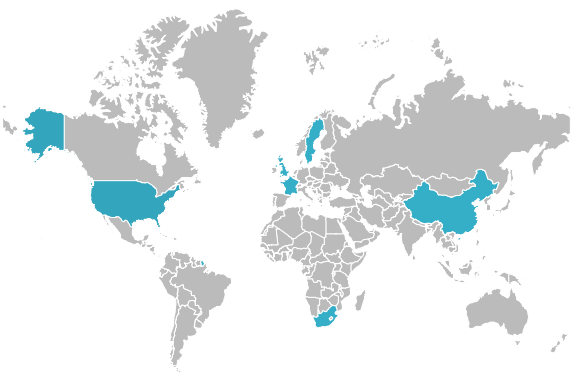
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY

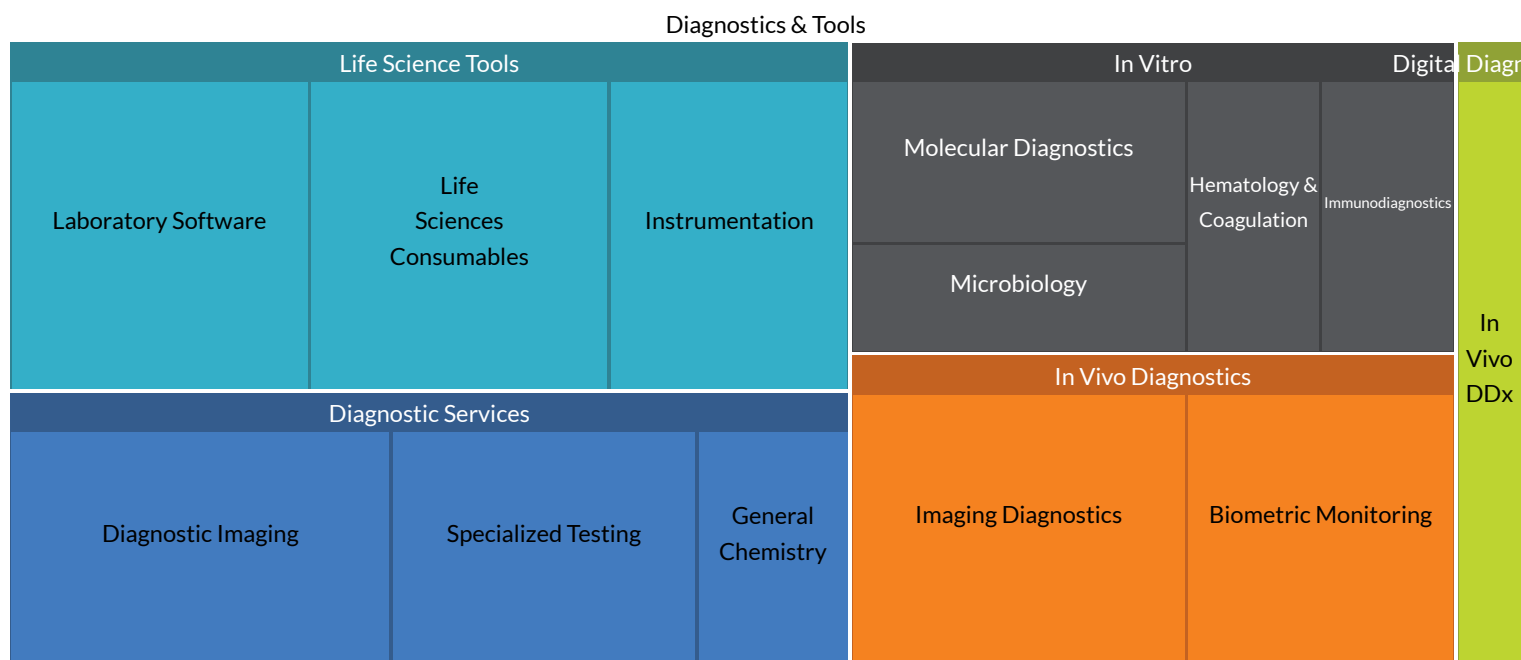


SELECTED TRANSACTIONS						
Announced Date	Segment	Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
10/24/2023	In Vivo Diagnostics	Imaging Diagnostics	CAE Healthcare, Inc.	United States	Madison Industries Holdings LLC	-
10/19/2023	In Vivo Diagnostics	Biometric Monitoring	Banook Medical Services SAS	France	Motion Equity Partners S.A.S, Turenne Santé	-
10/18/2023	Diagnostic Services In Vivo Diagnostics	Diagnostic Imaging Imaging Diagnostics	Brown's Medical Imaging, L.L.C.	United States	Atlantic Street Capital Management, LLC	-
10/17/2023	Life Science Tools	Consumables	Olink Holding AB (publ) (NasdaqGM:OLK)	Sweden	Thermo Fisher Scientific Inc. (NYSE:TMO)	3,276.8

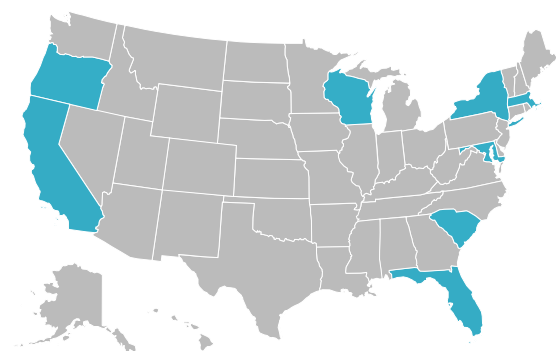
Announced Date	Segment	Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
10/11/2023	In Vitro Diagnostic Services	Molecular Specialized Testing	Genetron Holdings Limited (NasdaqGM:GTH)	China	New Genetron Holding Limited	151.1
10/5/2023	Diagnostic Services	Diagnostic Imaging	Alliance Medical Group Ltd.	United Kingdom	iCON Infrastructure LLP	721.1
10/4/2023	Life Science Tools	Instrumentation	Standard BioTools Inc. (NasdaqGS:LAB)	United States	SomaLogic, Inc. (NasdaqGM:SLGC)	573.6

FINANCINGS

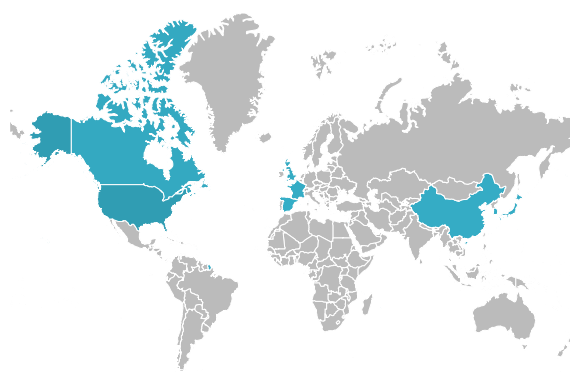
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY



SELECTED TRANSACTIONS

Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
10/31/2023	Diagnostic Services In Vivo Diagnostics	Diagnostic Imaging Imaging Diagnostics	Danyang Huichuang Medical Equipment Co., Ltd.	China	Shenzhen Leaguer Tsing-Yuan Venture Capital Management Co., Ltd., Jiangsu Addor Equity Investment Fund Management Co., Ltd., Tao Capital, Haichuang Tiancheng (Guangzhou) Equity Investment Fund Management Co., Ltd.	13.7
10/31/2023	Life Science Tools	Lab Software	Engine Biosciences Pte. Ltd.	Singapore	Polaris Partners L.P.	27.0

Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
10/31/2023	Diagnostic Services	Specialized Testing	Aqtual	-	Genoa Ventures, LLC, Manta Ray Ventures, Yu Galaxy	16.0
10/27/2023	In Vivo Diagnostics	Imaging Diagnostics	Owl Peak Technologies, Inc	United States	Virginia Venture Partners	-
10/26/2023	Diagnostic Services	Diagnostic Imaging	Medmo, Inc.	United States	Undisclosed	5.0
10/25/2023	In Vivo Diagnostics	Biometric Monitoring	G Medical Innovations Holdings Ltd (OTCPK:GMVD.F)	Israel	Undisclosed	0.5
10/25/2023	Life Science Tools	Consumables Instrumentation	GW Vitek CO.,LTD. (KOSDAQ:A036180)	Korea (Republic of)	Undisclosed	12.6
10/25/2023	Life Science Tools	Lab Software	Rymedi, Inc.	United States	White Star Capital, L.P., Blockchange Ventures, Ava Labs, Inc., Investment Arm, Blizzard Fund, RW3 Ventures	9.0
10/19/2023	Life Science Tools	Lab Software Consumables Instrumentation	Oxford Nanopore Technologies plc (LSE:ONT)	United Kingdom	bioMérieux S.A. (ENXTPA:BIM)	85.0
10/18/2023	Diagnostic Services	Specialized Testing	Variantyx Inc.	United States	Pitango Venture Capital, Peregrine Ventures, 20/20 HealthCare Partners LLC, Robert Bosch Venture Capital GmbH, New Era Capital Partners	-
10/17/2023	In Vitro Life Science Tools	Microbiology Instrumentation	Virax Biolabs Group Limited (NasdaqCM:VRAX)	United Kingdom	Undisclosed	2.2
10/17/2023	Life Science Tools	Consumables	VedaBio	-	OMX Ventures	40.0
10/16/2023	In Vitro Diagnostic Services	Molecular Hematology & Coagulation General Chemistry	Vito Diagnostics	China	Meihong Investment, Meihong Investment, Hangzhou Tenghua Investment Management Partnership (Limited Partnership)	-
10/12/2023	Life Science Tools In Vivo Diagnostics	Lab Software Imaging Diagnostics	Cirdan Imaging Limited	United Kingdom	Kernel Management Partners Limited, Clarendon Fund Managers Limited	2.8
10/12/2023	Diagnostic Services	Diagnostic Imaging	Smart Scan Medical Imaging, LLC	United States	Undisclosed	0.4
10/10/2023	In Vivo Diagnostics	Biometric Monitoring	Onalabs Inno-Hub S.L.	Spain	Undisclosed	1.9
10/10/2023	In Vivo Diagnostics	Biometric Monitoring	FluidAI Medical	Canada	Kyto Technology and Life Science, Inc. (OTCPK:KBPH), SOSV Investments LLC, Graphene Ventures, Boutique Venture Partners, Threshold Impact Ltd., IFG.VC Limited, Leva Capital, Juno Pharmaceuticals Pty Ltd	11.0
10/4/2023	Digital Diagnostics	In Vivo DDx	Orakl Oncology SAS	France	Speedinvest GmbH, Verve Capital Partners AG, Hardware Club	3.2
10/4/2023	In Vivo Diagnostics	Imaging Diagnostics	Promaxo, Inc.	United States	Undisclosed	-
10/4/2023	In Vitro Diagnostic Services	Molecular Immunodiagnostics Specialized Testing	Cranebio Co., Ltd.	Japan	Nippon Venture Capital Co., Ltd., Axil Capital Partners LLP, Akigin Capital Partners	1.7
10/2/2023	Life Science Tools	Consumables	Goodwin Biotechnology, Incorporated	United States	Undisclosed	5.0
10/2/2023	Diagnostic Services	Diagnostic Imaging	Leveljump Healthcare Corp. (TSXV:JUMP)	Canada	Undisclosed	0.6

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	1,058	8.1x	6.6x	33.5x	23.1x
Biocartis Group NV	Belgium	163	2.5x	2.6x	NM	NM
Dx & Vx Co., Ltd.	Korea (Republic of)	135	4.3x	NM	NM	NM
Genomictree Inc.	Korea (Republic of)	186	43.5x	NM	NM	NM
Guangdong HybriBio Biotech Co.,Ltd.	China	714	2.4x	4.3x	7.0x	NM
Qiagen N.V.	Netherlands	9,008	4.6x	4.5x	16.7x	13.0x
Sansure Biotech Inc.	China	655	1.6x	NM	8.9x	NM
Seegene, Inc.	Korea (Republic of)	376	1.1x	1.4x	32.4x	8.4x
Tellgen Corporation	China	336	4.1x	3.8x	17.7x	12.4x
Zhejiang Orient Gene Biotech Co., Ltd. (SHSE:688298)	China	398	1.9x	NM	NM	NM
Mean		1,303	7.4x	3.9x	19.4x	14.2x
Median		387	3.3x	4.1x	17.2x	12.7x

Microbiology

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Accelerate Diagnostics, Inc. (NasdaqCM:AXDX)	United States	94	8.0x	5.7x	NM	NM
bioMérieux S.A. (ENXTPA:BIM)	France	11,381	2.9x	2.8x	13.5x	12.2x
OraSure Technologies, Inc. (NasdaqGS:OSUR)	United States	208	0.4x	0.9x	3.2x	83.3x
QuidelOrtho Corporation	United States	6,555	2.1x	2.2x	8.0x	8.0x
Sansure Biotech Inc.	China	655	1.6x	NM	8.9x	NM
T2 Biosystems, Inc. (NasdaqCM:TTOO)	United States	63	4.8x	4.8x	NM	NM
Mean		3,159	3.3x	3.3x	8.4x	34.5x
Median		432	2.5x	2.8x	8.5x	12.2x

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	312	4.7x	NM	42.8x	NM
Mean		312	4.7x	NM	42.8x	NM
Median		312	4.7x	NM	42.8x	NM

Hematology & Coagulation

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Beijing Succeder Technology Inc.	China	291	7.9x	7.1x	20.3x	NM
Sysmex Corporation	Japan	9,632	3.5x	3.1x	13.6x	12.4x
Mean		4,962	5.7x	5.1x	17.0x	12.4x
Median		4,962	5.7x	5.1x	17.0x	12.4x

DIAGNOSTIC SERVICES						
Diagnostic Imaging						
Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Akumin Inc. (OTCPK:AKUM.Q)	United States	1,656	2.2x	NM	8.9x	NM
Centro de Imagem Diagnósticos S.A.	Brazil	468	2.1x	NM	26.7x	NM
Integral Diagnostics Limited (ASX:IDX)	Australia	604	2.2x	2.0x	11.5x	9.4x
RadNet, Inc. (NasdaqGM:RDNT)	United States	3,191	2.1x	1.9x	10.1x	13.8x
Mean		1,480	2.1x	2.0x	14.3x	11.6x
Median		1,130	2.1x	2.0x	10.8x	11.6x
Specialized Testing						
Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Adaptive Biotechnologies Corporation	United States	457	2.4x	2.0x	NM	NM
BGI Genomics Co., Ltd.	China	2,059	2.7x	NM	22.6x	NM
Biora Therapeutics, Inc. (NasdaqGM:BIOR)	United States	151	NM	NM	NM	NM
Castle Biosciences, Inc. (NasdaqGM:CSTL)	United States	208	1.2x	1.1x	NM	NM
Dx & Vx Co., Ltd.	Korea (Republic of)	135	4.3x	NM	NM	NM
Exact Sciences Corporation	United States	12,923	5.6x	4.9x	NM	62.9x
Genetron Holdings Limited (NasdaqGM:GTH)	China	81	0.9x	NM	NM	NM
Guardant Health, Inc.	United States	3,183	6.2x	5.3x	NM	NM
Invitae Corporation	United States	1,421	2.9x	2.8x	NM	NM
MDxHealth SA	Belgium	74	1.4x	1.0x	NM	NM
Myriad Genetics, Inc. (NasdaqGS:MYGN)	United States	1,352	1.9x	1.8x	NM	60.5x
Natera, Inc.	United States	4,389	4.7x	3.9x	NM	NM
NeoGenomics, Inc.	United States	1,989	3.6x	3.4x	NM	NM
Veracyte, Inc.	United States	1,331	4.1x	3.7x	NM	NM
Mean		2,125	3.2x	3.0x	22.6x	61.7x
Median		1,342	2.9x	3.1x	22.6x	61.7x
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	3,800	1.4x	1.3x	9.5x	6.6x
Dr. Lal PathLabs Limited (NSEI:LALPATHLAB)	India	2,369	9.6x	8.4x	36.5x	32.5x
Guangzhou Kingmed Diagnostics Group Co., Ltd.	China	3,790	2.9x	2.7x	22.8x	14.4x
H.U. Group Holdings, Inc.	Japan	1,175	0.7x	0.7x	5.6x	5.6x
Integrated Diagnostics Holdings plc	Jersey	255	2.2x	1.9x	8.8x	6.1x
Laboratory Corporation of America Holdings (NYSE:LH)	United States	22,673	1.5x	1.8x	9.5x	10.6x
Medicover AB (publ) (OM:MCOV B)	Sweden	2,683	1.6x	1.4x	11.8x	9.1x
Metropolis Healthcare Limited (NSEI:METROPOLIS)	India	885	6.4x	6.1x	26.3x	23.2x
Quest Diagnostics Incorporated	United States	19,511	2.1x	2.1x	9.3x	10.4x
Sonic Healthcare Limited	Australia	10,205	2.0x	1.8x	9.8x	9.2x
Thyrocare Technologies Limited	India	343	5.2x	4.6x	22.8x	17.3x
Mean		6,154	3.2x	3.0x	15.7x	13.2x

Median	2,683	2.1x	1.9x	9.8x	10.4x
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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	208	9.4x	36.5x	NM	NM
Schrödinger, Inc.	United States	1,132	5.8x	4.7x	NM	NM
Simulations Plus, Inc. (NasdaqGS:SLP)	United States	589	9.9x	8.8x	38.3x	25.5x
SyntekaBio, Inc.	Korea (Republic of)	95	NM	NM	NM	NM
Mean		506	8.4x	16.7x	38.3x	25.5x
Median		399	9.4x	8.8x	38.3x	25.5x

Life Sciences Consumables

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Abcam plc	United Kingdom	5,449	11.3x	10.1x	36.6x	25.5x
Adaptive Biotechnologies Corporation	United States	457	2.4x	2.0x	NM	NM
Avantor, Inc.	United States	17,150	2.4x	2.5x	12.3x	13.6x
Bio-Techne Corporation	United States	9,046	7.9x	7.4x	24.8x	19.6x
Bioneer Corporation	Korea (Republic of)	573	3.4x	NM	55.0x	NM
Borosil Limited (BSE:543212)	India	528	4.1x	NM	36.8x	NM
Cellectis S.A.	France	56	2.3x	2.6x	NM	NM
Genscript Biotech Corporation	China	5,620	7.9x	6.5x	NM	NM
Guangzhou Jet Bio-Filtration Co., Ltd.	China	315	5.0x	4.5x	26.4x	28.9x
Guerbet SA (ENXTPA:GBT)	France	592	0.7x	0.7x	6.0x	5.1x
NKMAX CO., Ltd.	Korea (Republic of)	414	50.9x	NM	NM	NM
Porton Pharma Solutions Ltd.	China	2,141	3.2x	4.3x	12.9x	13.6x
Qiagen N.V.	Netherlands	9,008	4.6x	4.5x	16.7x	13.0x
Repligen Corporation (NasdaqGS:RGEN)	United States	7,302	10.9x	10.6x	47.7x	44.5x
Twist Bioscience Corporation	United States	640	2.7x	2.3x	NM	NM
Vitrolife AB (publ)	Sweden	1,880	6.1x	5.5x	19.4x	15.6x
Viva Biotech Holdings	China	565	1.7x	1.5x	8.3x	7.6x
Mean		3,632	7.5x	4.6x	25.2x	18.7x
Median		640	4.1x	4.4x	22.1x	14.6x

Instrumentation

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
10x Genomics, Inc.	United States	3,851	6.8x	5.9x	NM	NM
AnHui Wanyi Science and Technology Co., Ltd.	China	276	2.7x	2.0x	NM	13.4x
Biotage AB (publ) (OM:BIOT)	Sweden	813	5.7x	4.6x	25.3x	20.0x
Bruker Corporation	United States	9,072	3.3x	3.1x	14.9x	13.7x
Harvard Bioscience, Inc.	United States	231	2.0x	2.0x	25.0x	11.7x
Illumina, Inc.	United States	18,810	4.2x	3.9x	54.0x	33.3x
Mettler-Toledo International Inc. (NYSE:MTD)	United States	23,610	6.0x	6.1x	18.2x	18.1x

NanoString Technologies, Inc.	United States	197	1.4x	1.0x	NM	NM
Pacific Biosciences of California, Inc.	United States	1,758	10.4x	7.4x	NM	NM
Quanterix Corporation (NasdaqGM:QTRX)	United States	529	4.7x	4.5x	NM	NM
Standard BioTools Inc. (NasdaqGS:LAB)	United States	428	4.1x	3.9x	NM	NM
Waters Corporation	United States	16,496	5.5x	5.3x	15.9x	14.7x
Mean		6,339	4.7x	4.1x	25.6x	17.8x
Median		1,286	4.5x	4.2x	21.6x	14.7x

Lab/Biobank Equipment

Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
BICO Group AB (publ)	Sweden	298	1.4x	1.4x	NM	15.1x
Sartorius Aktiengesellschaft	Germany	21,612	5.7x	5.5x	19.7x	18.0x
Stratec SE	Germany	639	2.4x	2.1x	17.5x	10.5x
Tecan Group Ltd. (SWX:TECN)	Switzerland	3,645	3.0x	2.8x	18.0x	14.2x
Mean		6,549	3.1x	3.0x	18.4x	14.5x
Median		2,142	2.7x	2.5x	18.0x	14.6x

IN VIVO DIAGNOSTICS

Biometric Monitoring

Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Contec Medical Systems Co.,Ltd	China	1,234	10.4x	NM	39.8x	NM
Guangdong Transtek Medical Electronics Co., Ltd	China	270	2.4x	2.2x	NM	30.9x
iRhythm Technologies, Inc.	United States	2,365	5.2x	4.5x	NM	NM
TaiDoc Technology Corporation	Taiwan (Province of China)	286	1.3x	2.1x	4.2x	7.4x
Zhejiang Starry Pharmaceutical Co.,Ltd.	China	1,074	3.3x	3.2x	23.6x	15.0x
Mean		1,046	4.5x	3.0x	22.5x	17.8x
Median		1,074	3.3x	2.7x	23.6x	15.0x

Imaging Diagnostics

Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
4DMedical Limited	Australia	61	NM	20.8x	NM	NM
Detection Technology Oyj	Finland	154	1.4x	1.3x	16.6x	9.5x
iRay Technology Company Limited	China	3,006	11.9x	9.3x	31.3x	20.5x
Kromek Group plc	United Kingdom	51	2.4x	2.0x	NM	46.7x
Nano-X Imaging Ltd. (NasdaqGM:NNOX)	Israel	216	22.5x	10.9x	NM	NM
Ray Co., Ltd.	Korea (Republic of)	252	2.4x	1.8x	16.6x	10.4x
Siemens Healthineers AG	Germany	70,611	3.1x	3.0x	19.9x	14.6x
SonoScape Medical Corp.	China	2,622	9.7x	7.4x	40.5x	26.9x
Varex Imaging Corporation (NasdaqGS:VREX)	United States	1,060	1.2x	1.2x	9.4x	7.1x
Mean		8,670	6.8x	6.4x	22.4x	19.4x
Median		252	2.8x	3.0x	18.3x	14.6x

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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