

Industry BlueBook

Diagnostics & Tools

September 2022

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

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

EV MULTIPLES

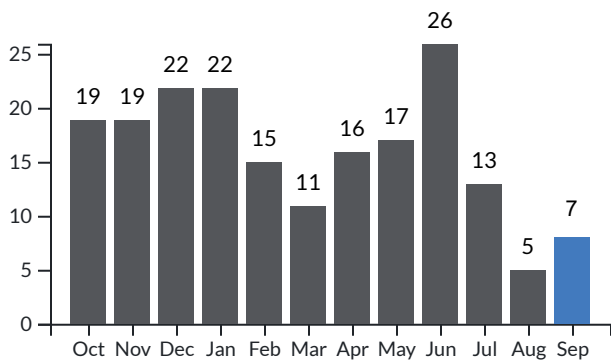
	REVENUE				EBITDA			
	LTM	%Δ	FTM	%Δ	LTM	%Δ	FTM	%Δ
In Vitro Diagnostics	3.2x	NM	3.0x	NM	12.0x	1%	11.9x	NM
Diagnostic Services	2.4x	NM	2.2x	1%	9.9x	NM	9.1x	NM
Life Science Tools	4.5x	NM	5.0x	NM	22.2x	8%	18.9x	NM
In Vivo Diagnostics	3.4x	NM	3.0x	NM	20.8x	NM	12.6x	NM

M&A DEALS & FINANCINGS

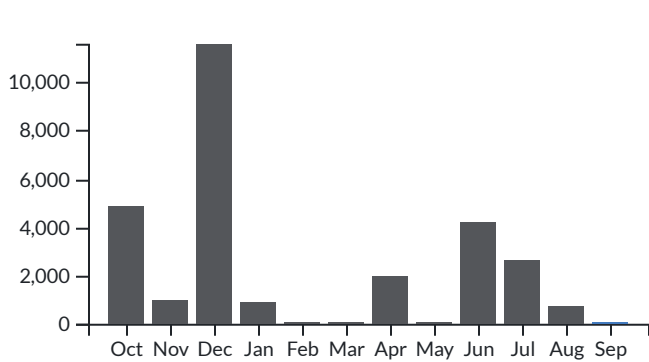
	DEAL COUNT				VOLUME (\$MM)			
	M&A	%Δ	FINANCINGS	%Δ	M&A	%Δ	FINANCINGS	%Δ
In Vitro Diagnostics	2	NM	5	NM	62	NM	16	NM
Diagnostic Services	2	100%	4	0%	1	NM	107	19%
Life Science Tools	2	50%	6	75%	24	NM	197	NM
In Vivo Diagnostics	1	NM	7	40%	0	NM	49	8%

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

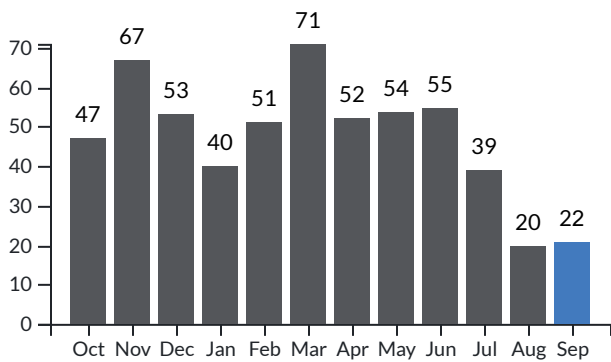
12 Month Deal Count M&A



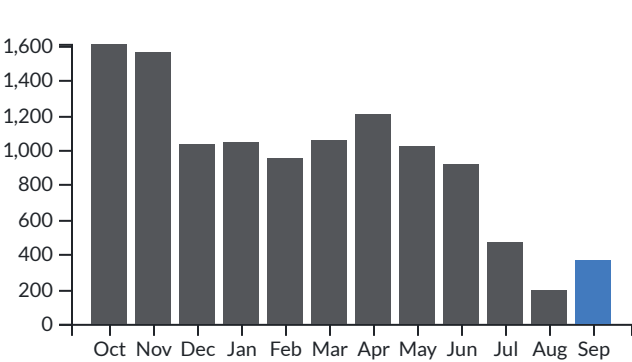
12 Month Volume M&A (\$MM)



12 Month Deal Count Financings

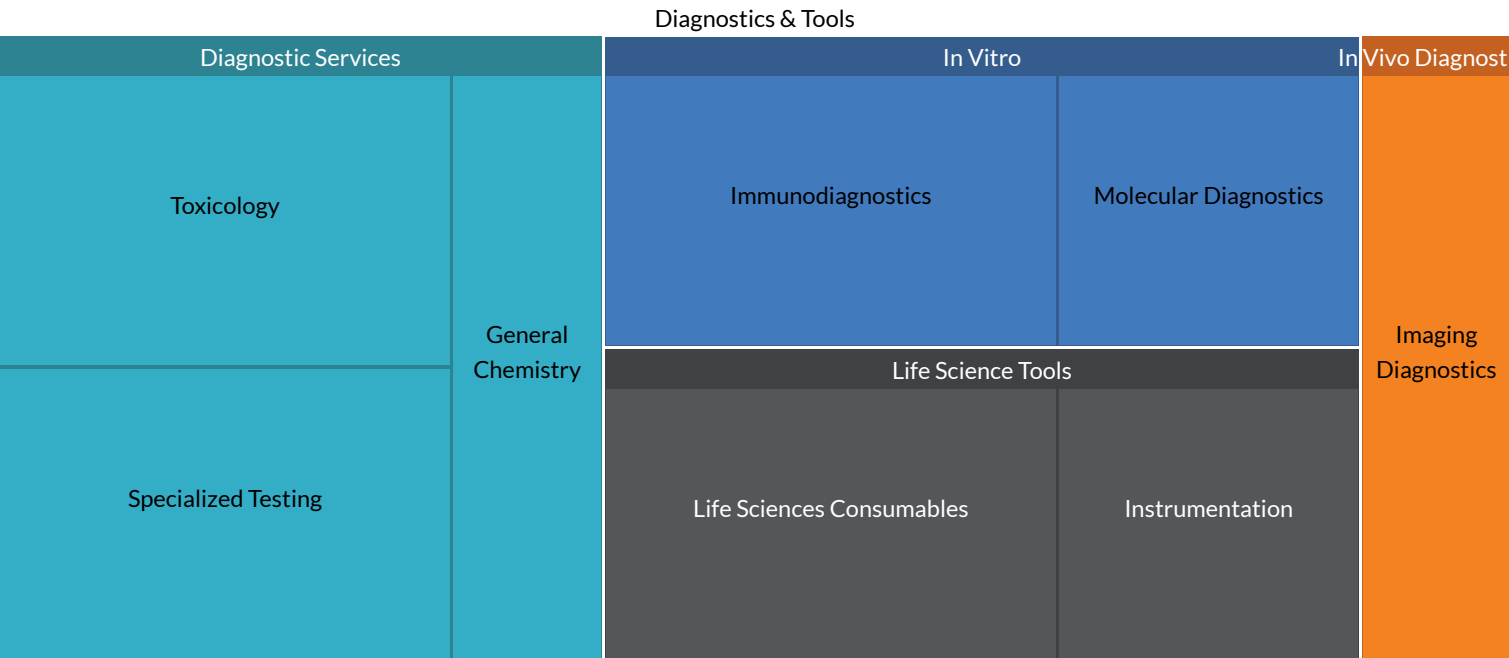


12 Month Volume Financings (\$MM)

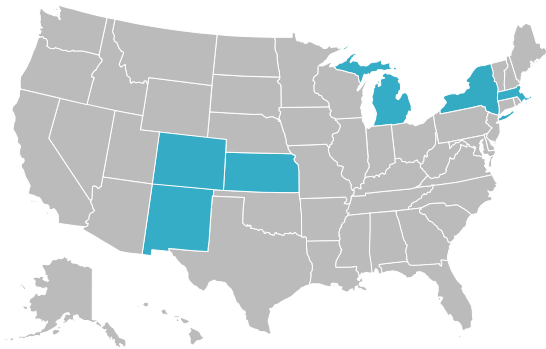


M&A ACTIVITY

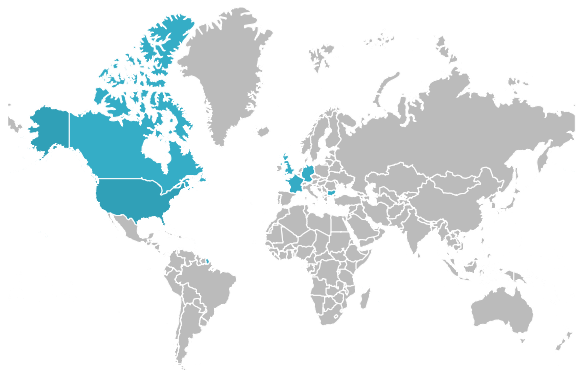
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY

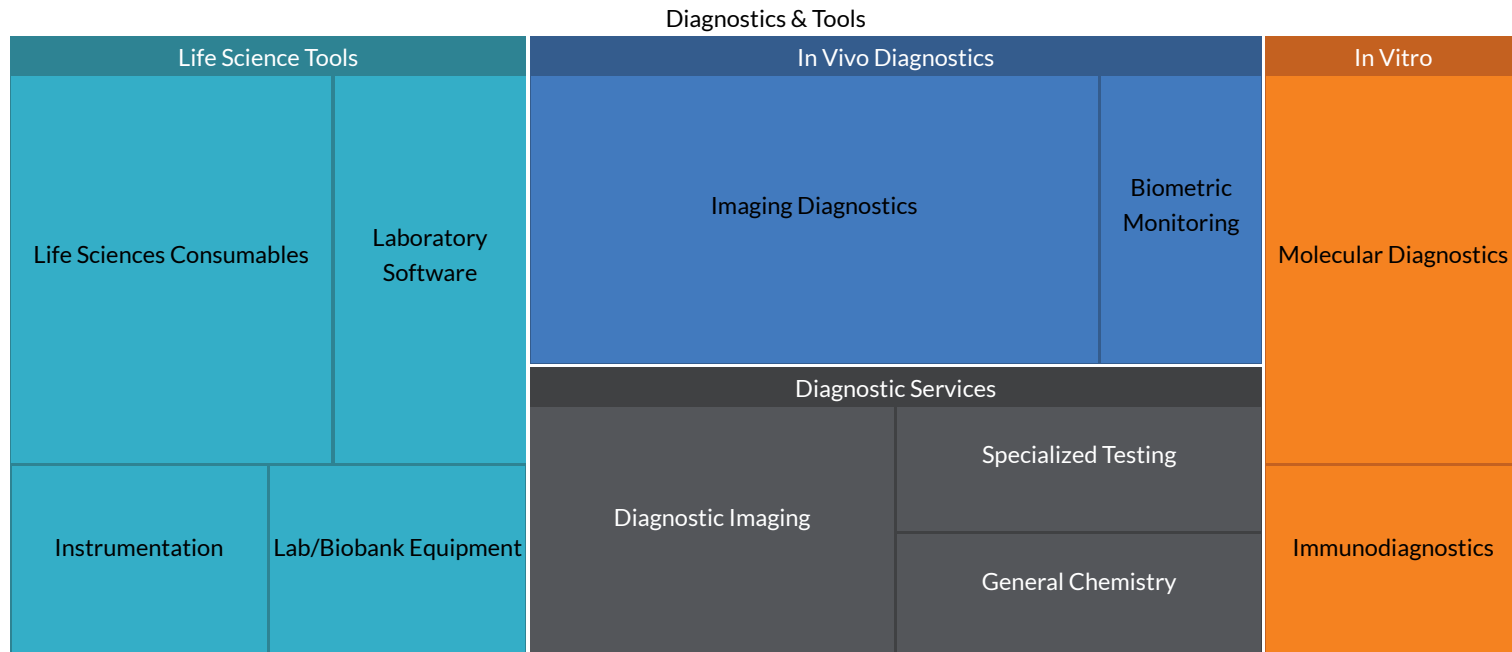


SELECTED TRANSACTIONS						
Announced Date	Segment	Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
9/27/2022	Diagnostic Services	General Chemistry	Abcodia Ltd.	United Kingdom	GENinCode Plc (AIM:GENI)	1.1
9/23/2022	In Vitro	Molecular Immunodiagnosics	Theradiag SA	France	Biosynex SA (ENXTPA:ALBIO)	23.7
9/20/2022	Life Science Tools	Consumables	FIDELIS RESEARCH Ltd.	Bulgaria	BioIVT	-

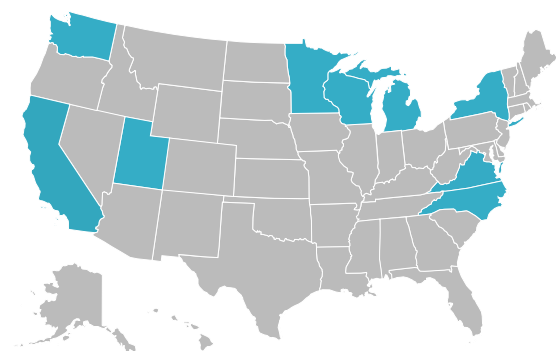
Announced Date Segment		Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
9/16/2022	Life Science Tools	Consumables	Medical Imaging Solutions International	United States	CHS USA Inc.	-
9/15/2022	In Vivo Diagnostics	Imaging Diagnostics	Life Image Inc.	United States	Intelerad Medical Systems Incorporated	-
9/9/2022	In Vitro	Immunodiagnos	LightDeck Diagnostics	United States	Heska Corporation (NasdaqCM:HSKA)	38.7
9/5/2022	Diagnostic Services	Specialized Testing	Arcensus GmbH	Germany	Dammam Valley	-

FINANCINGS

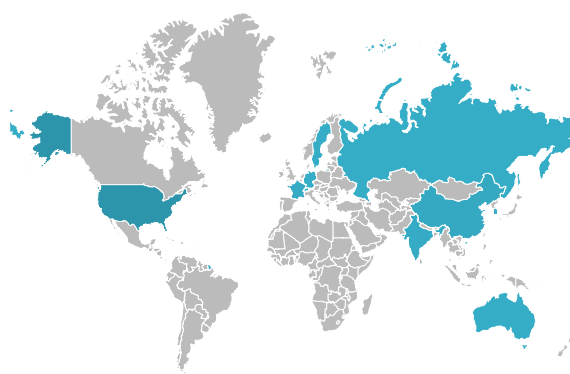
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY



SELECTED TRANSACTIONS

Closed Date Segment		Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
9/29/2022	Life Science Tools	Consumables	iXCells Biotechnologies USA,LLC.	United States	Great Point Partners, LLC	-
9/27/2022	Life Science Tools	Lab Software	Elucidata Corporation	India	Eight Roads Ventures, IvyCap Ventures, Entrepreneur First Operations Limited, Hyperplane Venture Capital	16.0
9/20/2022	In Vitro Life Science Tools	Immunodiagnosics Consumables	4A Biotech Co., Ltd.	China	Undisclosed	0.4

Closed Date Segment		Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
9/19/2022	In Vivo Diagnostics	Imaging Diagnostics	Incepto Medical SAS	France	SHS Gesellschaft für Beteiligungsmanagement MbH, Bpifrance Investissement SAS, Karista, Oxford Science Enterprises, Pureos Partners AG	27.0
9/19/2022	Life Science Tools	Lab Software	Scailyte AG	Switzerland	Swisscom Ventures, Plug and Play, LLC, Verve Capital Partners AG, Venture Kick, 4FO Ventures Partners, Verve Capital Partners AG	6.2
9/15/2022	In Vivo Diagnostics	Imaging Diagnostics	Aignostics GmbH	Germany	Wellington Partners Advisory AG, IBB Beteiligungsgesellschaft mbH, Roche Venture Fund, Boehringer Ingelheim, Investment Arm, ATHOS Service GmbH	14.0
9/13/2022	Life Science Tools	Lab/Biobank Equipment	Zhuhai Digifluidic Biotechnology Co., Ltd.	China	Wuhan Easy Diagnosis Biomedicine Co.,Ltd. (SZSE:002932), Guangzhou Funway Asset Management Co., Ltd., Guangzhou Huiju Xinxing Equity Investment Partnership	14.5
9/13/2022	In Vivo Diagnostics	Imaging Diagnostics	Scinovia Corp	United States	Undisclosed	3.8
9/13/2022	In Vivo Diagnostics	Imaging Diagnostics	Imricor Medical Systems, Inc.	United States	Undisclosed	2.0
9/13/2022	Life Science Tools	Consumables	RayzeBio, Inc.	United States	Sofinnova Investment, Inc., Laurion Capital Management LP, Sectoral Asset Management Inc., Boyu Capital Consultancy Co., Ltd., Laurion Capital Management LP, British Patient Capital Limited, StartX	160.0
9/13/2022	In Vivo Diagnostics	Biometric Monitoring	Vital Connect, Inc.	United States	Health Insight Capital	-
9/9/2022	Diagnostic Services	Diagnostic Imaging	Beijing Digital Precision Medicine Technology Co., Ltd.	China	Gree Electric Appliances, Inc. of Zhuhai (SZSE:000651), Shanghai Haoshuo Investment Management Co., Ltd.	15.0
9/9/2022	Diagnostic Services	Diagnostic Imaging	Imapôle Lyon-Villeurbanne	France	Eurazeo SE (ENXTPA:RF), Bpifrance	50.2
9/8/2022	Diagnostic Services	General Chemistry	Be Golden, Inc.	United States	Y Combinator Management LLC	0.5
9/8/2022	In Vitro	Molecular	Signatur Biosciences, Inc.	United States	Y Combinator Management LLC	0.5
9/7/2022	In Vitro	Molecular	Inherent Biosciences, Inc.	United States	Portfolia, Inc., Investment Arm, Propel Bio Partners LLC	-
9/7/2022	In Vitro	Hematology	Boule Diagnostics AB (publ)	Sweden	Keel Capital Ab	-
9/6/2022	Diagnostic Services	Diagnostic Imaging	Elephas Biosciences Corporation	United States	The Invus Group, LLC, Boyu Capital Consultancy Co., Ltd., Colt Ventures, Northpond Ventures, LLC, Wellington Partners Advisory AG, WARF Ventures	41.5
9/5/2022	In Vivo Diagnostics	Imaging Diagnostics	Sinso	Singapore	MZ Cryptos, Inc.	-
9/2/2022	In Vivo Diagnostics	Imaging Diagnostics	Sciberia.io	Russian Federation	Interros Company	2.5
9/1/2022	In Vitro	Molecular	NGeneBio Co., Ltd.	Korea (Republic of)	Undisclosed	14.7

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	1,200	9.4x	6.8x	37.0x	21.7x
Biocartis Group NV (ENXTBR:BCART)	Belgium	174	3.0x	2.8x	NM	NM
Genomictree Inc.	Korea (Republic of)	63	3.1x	NM	13.4x	NM
Guangdong HybriBio Biotech Co.,Ltd.	Hong Kong	1,034	1.7x	1.7x	3.7x	NM
Immunovia	Sweden	54	NM	18.2x	NM	NM
Oncimmune Holdings plc	United Kingdom	57	13.2x	NM	NM	NM
Qiagen N.V. (NYSE:QGEN)	Netherlands	10,024	4.4x	5.0x	11.2x	14.1x
Sansure Biotech Inc.	China	1,172	1.6x	1.7x	3.3x	3.2x
Seegene, Inc.	Korea (Republic of)	602	0.7x	1.2x	1.4x	3.5x
Tellgen Corporation	China	392	4.2x	3.2x	17.8x	11.6x
Todos Medical Ltd.	Israel	60	6.1x	NM	NM	NM
Zhejiang Orient Gene Biotech Co., Ltd. (SHSE:688298)	China	776	0.5x	NM	1.2x	NM
Mean		1,301	4.4x	5.1x	11.1x	10.8x
Median		497	3.1x	3.0x	7.5x	11.6x

Microbiology

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Accelerate Diagnostics, Inc.	United States	225	16.9x	14.0x	NM	NM
bioMérieux S.A. (ENXTPA:BIM)	France	9,559	2.8x	2.9x	10.1x	11.9x
Meridian Bioscience, Inc.	United States	1,328	3.9x	4.6x	12.7x	NM
OraSure Technologies, Inc. (NasdaqGS:OSUR)	United States	199	0.8x	0.7x	NM	13.8x
Quidel Corporation (NasdaqGS:QDEL)	United States	7,272	2.6x	2.6x	4.7x	10.1x
Sansure Biotech Inc.	China	1,172	1.6x	1.7x	3.3x	3.2x
T2 Biosystems, Inc.	United States	87	3.2x	2.8x	NM	NM
Mean		2,835	4.5x	4.2x	7.7x	9.8x
Median		1,172	2.8x	2.8x	7.4x	11.0x

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	204	3.1x	NM	22.6x	NM
Mean		204	3.1x	NM	22.6x	NM
Median		204	3.1x	NM	22.6x	NM

Hematology & Coagulation

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Beijing Succeeder Technology Inc.	China	156	4.7x	NM	12.9x	NM
Quotient Sciences	Switzerland	266	7.0x	6.4x	NM	NM

Sysmex Corporation (TSE:6869)	Japan	11,014	4.3x	3.8x	17.8x	14.6x
Mean		3,812	5.3x	5.1x	15.3x	14.6x
Median		266	4.7x	5.1x	15.3x	14.6x

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	1,676	2.7x	2.1x	11.9x	9.1x
Centro de Imagem Diagnósticos S.A.	Brazil	624	3.0x	NM	21.6x	NM
Integral Diagnostics Limited (ASX:IDX)	Australia	556	2.4x	2.0x	11.5x	9.1x
Medica Group Plc (LSE:MGP)	United Kingdom	186	2.3x	2.2x	11.5x	10.1x
RadNet, Inc. (NasdaqGM:RDNT)	United States	2,651	1.9x	1.9x	8.3x	12.5x
Mean		1,139	2.5x	2.0x	12.9x	10.2x
Median		624	2.4x	2.0x	11.5x	9.6x

Specialized Testing

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Adaptive Biotechnologies Corporation	United States	678	4.3x	3.3x	NM	NM
BGI Genomics Co., Ltd.	China	2,090	2.4x	2.6x	10.5x	8.6x
BioNexus Gene Lab Corporation	Malaysia	183	14.8x	NM	NM	NM
Burning Rock Biotech Limited	China	91	1.1x	0.9x	NM	NM
CareDx, Inc (NasdaqGM:CDNA)	United States	623	2.0x	1.8x	NM	NM
Castle Biosciences, Inc. (NasdaqGM:CSTL)	United States	421	3.8x	2.9x	NM	NM
Exact Sciences Corporation	United States	7,477	3.9x	3.5x	NM	NM
Fulgent Genetics, Inc.	United States	263	0.3x	0.8x	0.5x	6.6x
Invitae Corporation	United States	1,605	3.2x	3.1x	NM	NM
MDxHealth SA	Belgium	84	3.7x	1.7x	NM	NM
Myriad Genetics, Inc. (NasdaqGS:MYGN)	United States	1,356	2.0x	1.9x	NM	80.2x
Natera, Inc.	United States	4,012	5.6x	4.4x	NM	NM
NeoGenomics, Inc.	United States	1,229	2.5x	2.4x	NM	NM
Oncimmune Holdings plc	United Kingdom	57	13.2x	NM	NM	NM
OncoCyte Corporation (AMEX:OCX)	United States	51	6.3x	4.8x	NM	NM
Progenity, Inc. (NasdaqGM:PROG)	United States	174	NM	NM	NM	NM
Veracyte, Inc. (NasdaqGM:VCYT)	United States	1,042	3.9x	3.5x	NM	NM
Mean		1,261	4.6x	2.7x	5.5x	31.8x
Median		623	3.7x	2.7x	5.5x	8.6x

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	4,091	1.9x	1.6x	13.4x	7.9x
Dr. Lal PathLabs Limited (BSE:539524)	India	2,568	10.5x	9.4x	44.1x	37.4x
Guangzhou Kingmed Diagnostics Group Co., Ltd.	China	3,854	1.9x	2.0x	7.0x	7.9x
H.U. Group Holdings, Inc.	Japan	1,147	0.6x	0.7x	2.8x	3.6x

Instituto Hermes Pardini S.A.	Brazil	598	1.6x	1.4x	7.6x	6.6x
Integrated Diagnostics Holdings plc	Jersey	401	1.5x	2.0x	3.7x	4.6x
Laboratory Corporation of America Holdings (NYSE:LH)	United States	23,837	1.5x	1.6x	6.3x	8.7x
Medicover AB (publ) (OM:MCOV B)	Sweden	2,377	1.7x	1.5x	9.9x	9.7x
Metropolis Healthcare Limited (NSEI:METROPOLIS)	India	1,003	6.9x	6.6x	27.5x	24.9x
Quest Diagnostics Incorporated	United States	18,269	1.7x	2.0x	6.1x	10.4x
Sonic Healthcare Limited (ASX:SHL)	Australia	11,002	1.8x	2.1x	6.2x	8.9x
Thyrocare Technologies Limited	India	440	6.5x	6.4x	17.9x	21.9x
Mean		5,799	3.2x	3.1x	12.7x	12.7x
Median		2,473	1.8x	2.0x	7.3x	8.8x

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	534	5.1x	14.8x	NM	NM
Schrödinger, Inc. (NasdaqGS:SDGR)	United States	1,364	8.4x	7.3x	NM	NM
Simulations Plus, Inc.	United States	861	16.6x	14.3x	49.9x	37.0x
SyntekaBio, Inc.	Korea (Republic of)	51	NM	NM	NM	NM
Mean		703	10.0x	12.1x	49.9x	37.0x
Median		698	8.4x	14.3x	49.9x	37.0x

Life Sciences Consumables

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Abcam plc	United Kingdom	3,561	9.1x	7.7x	36.7x	22.9x
Abnova (Taiwan) Corporation	Taiwan (Province of China)	54	4.2x	NM	23.9x	NM
Adaptive Biotechnologies Corporation	United States	678	4.3x	3.3x	NM	NM
Avantor, Inc.	United States	19,508	2.6x	2.5x	12.1x	11.8x
Bio-Techne Corporation (NasdaqGS:TECH)	United States	11,218	10.2x	9.1x	29.6x	23.0x
Bioneer Corporation	Korea (Republic of)	413	2.5x	NM	25.0x	NM
Borosil Limited (BSE:543212)	India	517	4.6x	NM	26.8x	NM
Collectis S.A.	France	64	2.3x	1.4x	NM	NM
Genscript Biotech Corporation	China	3,999	6.8x	5.4x	NM	NM
Guangzhou Jet Bio-Filtration Co., Ltd.	China	546	4.8x	4.1x	16.2x	NM
Guerbet SA	France	447	0.6x	0.6x	6.6x	4.2x
NKMAX CO., Ltd.	Korea (Republic of)	373	44.0x	NM	NM	NM
Porton Pharma Solutions Ltd. (SZSE:300363)	China	3,549	4.4x	3.8x	13.3x	9.5x
Qiagen N.V. (NYSE:QGEN)	Netherlands	10,024	4.4x	5.0x	11.2x	14.1x
Repligen Corporation (NasdaqGS:RGEN)	United States	10,203	13.1x	12.4x	37.4x	39.2x
Twist Bioscience Corporation (NasdaqGS:TWST)	United States	1,537	8.4x	6.2x	NM	NM
Vitrolife AB (publ) (OM:VITR)	Sweden	2,111	9.4x	6.8x	28.4x	20.8x
Viva Biotech Holdings	China	636	2.0x	1.7x	11.7x	NM
Mean		3,858	7.6x	5.0x	21.5x	18.2x
Median		1,108	4.5x	4.6x	23.9x	17.5x

Instrumentation						
Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
10x Genomics, Inc.	United States	2,844	5.7x	5.0x	NM	NM
AnHui Wanyi Science and Technology Co., Ltd.	China	371	4.1x	NM	NM	NM
Berkeley Lights, Inc.	United States	90	1.0x	1.0x	NM	NM
Biotage AB (publ) (OM:BIOT)	Sweden	985	7.7x	6.5x	30.1x	23.1x
Bruker Corporation (NasdaqGS:BRKR)	United States	8,339	3.4x	3.3x	15.2x	13.9x
Harvard Bioscience, Inc.	United States	159	1.3x	1.3x	19.2x	9.6x
Illumina, Inc.	United States	31,274	6.7x	6.3x	34.3x	37.5x
Mettler-Toledo International Inc.	United States	26,218	6.8x	6.7x	22.2x	20.7x
NanoString Technologies, Inc.	United States	572	4.0x	3.4x	NM	NM
Pacific Biosciences of California, Inc.	United States	1,356	9.7x	8.8x	NM	NM
Quanterix Corporation (NasdaqGM:QTRX)	United States	92	0.8x	0.9x	NM	NM
Standard BioTools Inc.	United States	290	2.6x	NM	NM	NM
Waters Corporation	United States	17,289	6.0x	5.8x	16.8x	16.7x
Mean		6,914	4.6x	4.4x	23.0x	20.3x
Median		985	4.1x	5.0x	20.7x	18.7x

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	250	1.4x	1.3x	NM	34.5x
Sartorius Aktiengesellschaft (XTRA:SRT)	Germany	24,748	6.5x	5.7x	19.7x	16.9x
Stratec SE	Germany	1,004	3.8x	3.4x	19.5x	14.4x
Tecan Group Ltd. (SWX:TECN)	Switzerland	4,505	4.1x	3.9x	22.7x	18.9x
Mean		7,627	3.9x	3.6x	20.6x	21.2x
Median		2,755	4.0x	3.6x	19.7x	17.9x

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	1,203	11.8x	NM	52.2x	NM
Guangdong Transtek Medical Electronics Co., Ltd	China	195	0.9x	0.5x	NM	10.0x
iRhythm Technologies, Inc.	United States	3,688	10.2x	8.1x	NM	NM
TaiDoc Technology Corporation	Taiwan (Province of China)	401	1.4x	2.0x	3.2x	4.4x
Zhejiang Starry Pharmaceutical Co.,Ltd. (SHSE:603520)	China	1,085	3.7x	3.1x	17.0x	12.6x
Mean		1,314	5.6x	3.4x	24.1x	9.0x
Median		1,085	3.7x	2.5x	17.0x	10.0x
Imaging Diagnostics						
Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	

		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Siemens Healthineers AG (XTRA:SHL)	Germany	62,603	3.1x	2.9x	16.7x	14.7x
4DMedical Limited	Australia	81	NM	25.7x	NM	NM
Detection Technology Oyj	Finland	229	2.6x	2.1x	20.8x	12.8x
iRay Technology Company Limited	China	5,034	26.5x	18.5x	76.3x	42.1x
Nano-X Imaging Ltd. (NasdaqGM:NNOX)	Israel	477	89.9x	33.2x	NM	NM
Ray Co., Ltd.	Korea (Republic of)	156	2.2x	1.7x	36.2x	7.5x
SonoScape Medical Corp.	China	2,590	11.3x	9.7x	58.5x	39.6x
Varex Imaging Corporation (NasdaqGS:VREX)	United States	1,196	1.4x	1.4x	9.2x	7.7x
Mean		9,046	19.6x	11.9x	36.3x	20.7x
Median		837	3.1x	6.3x	28.5x	13.7x

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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