

Industry BlueBook

Diagnostics & Tools

October 2022

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

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

EV MULTIPLES

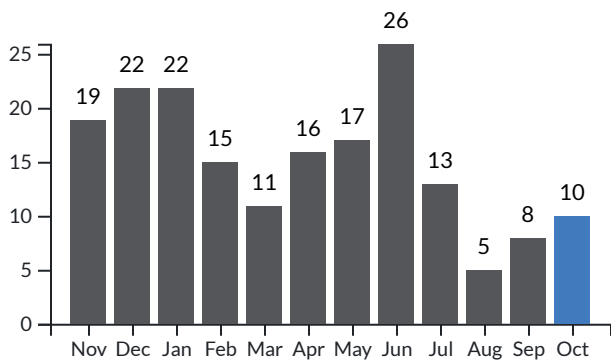
	REVENUE				EBITDA			
	LTM	%Δ	FTM	%Δ	LTM	%Δ	FTM	%Δ
In Vitro Diagnostics	3.6x	NM	3.6x	9%	12.4x	3%	12.9x	NM
Diagnostic Services	2.4x	NM	2.2x	0%	10.7x	NM	9.4x	NM
Life Science Tools	5.2x	NM	5.5x	0%	24.3x	20%	20.2x	NM
In Vivo Diagnostics	3.5x	NM	4.3x	5%	20.4x	4%	12.7x	0%

M&A DEALS & FINANCINGS

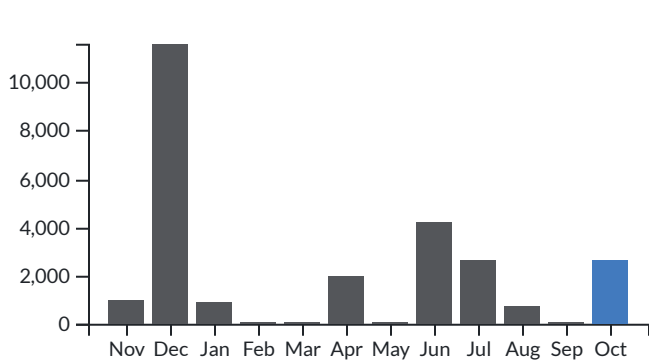
	DEAL COUNT				VOLUME (\$MM)			
	M&A	%Δ	FINANCINGS	%Δ	M&A	%Δ	FINANCINGS	%Δ
In Vitro Diagnostics	4	0%	5	25%	42	NM	44	NM
Diagnostic Services	4	25%	4	NM	2,610	NM	24	NM
Life Science Tools	1	0%	6	NM	2,587	NM	121	NM
In Vivo Diagnostics	2	100%	8	33%	0	NM	120	NM

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

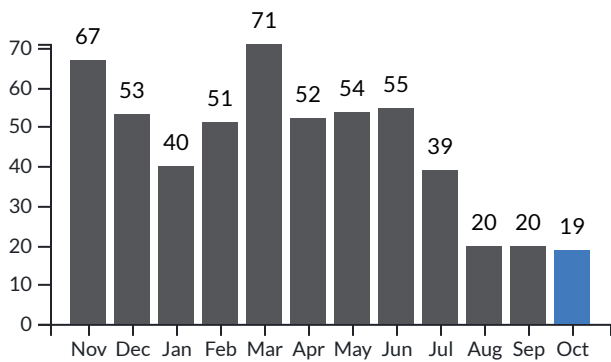
12 Month Deal Count M&A



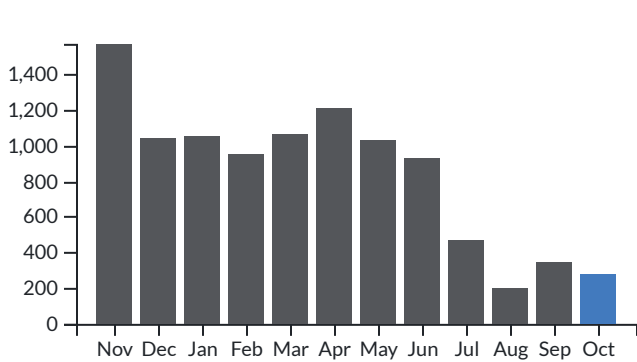
12 Month Volume M&A (\$MM)



12 Month Deal Count Financings

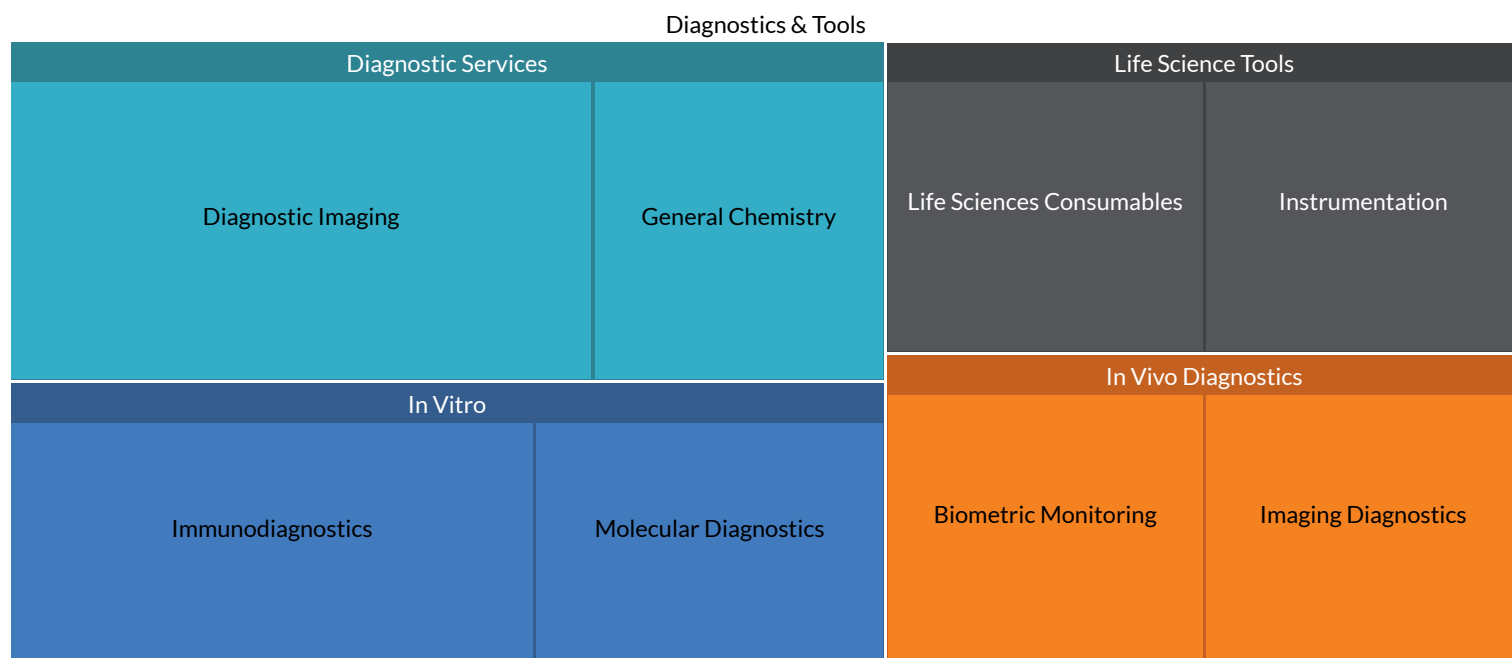


12 Month Volume Financings (\$MM)

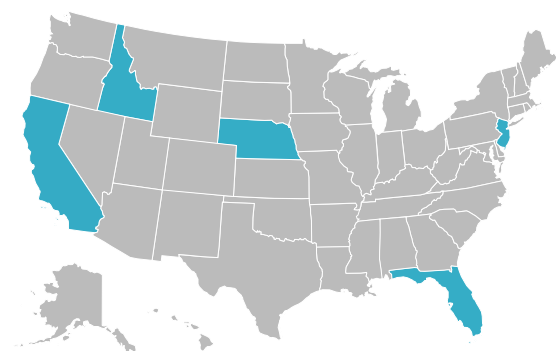


M&A ACTIVITY

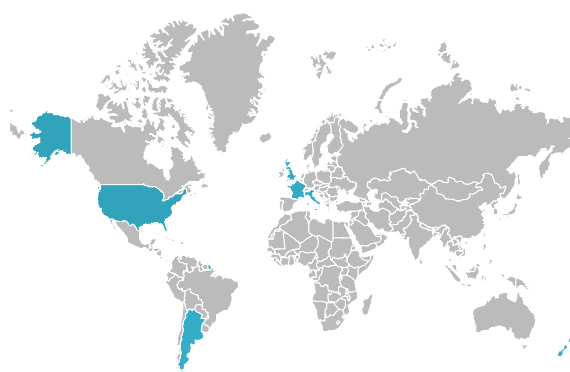
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY



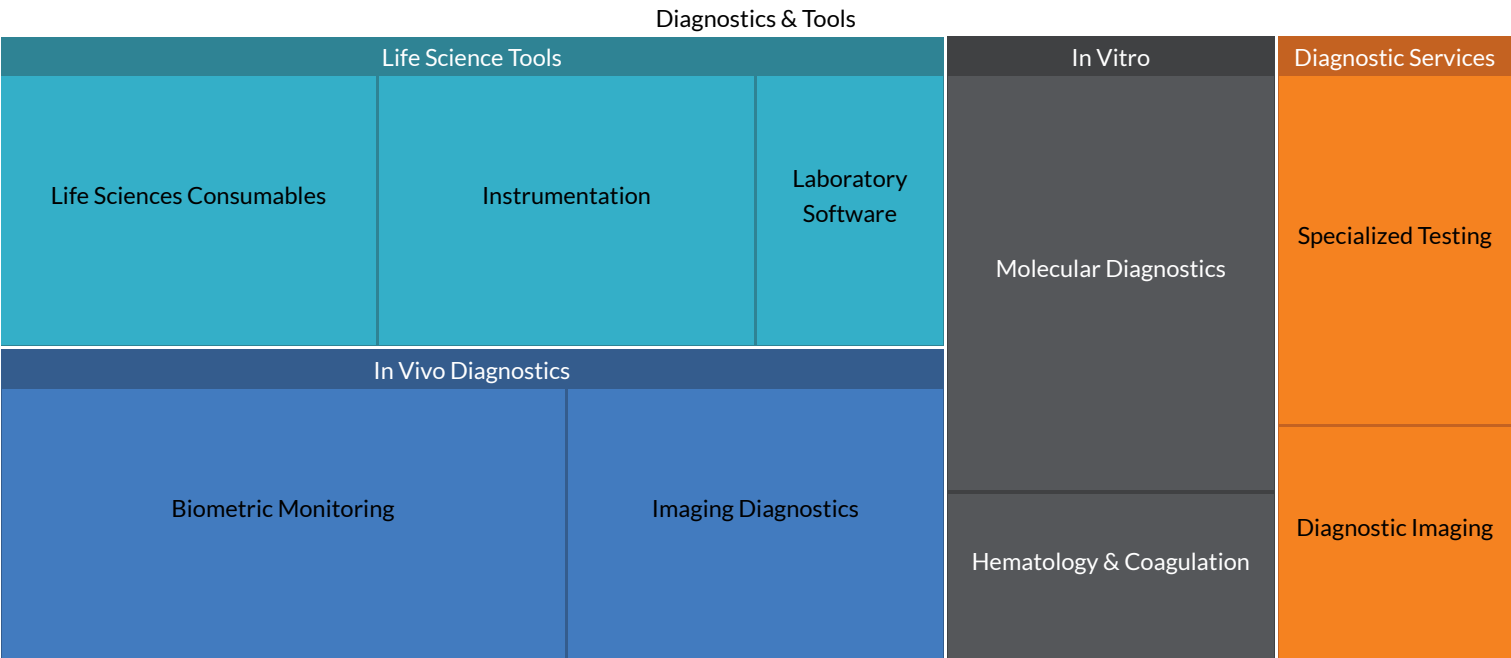
SELECTED TRANSACTIONS

Announced Date	Segment	Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
10/31/2022	In Vitro	Immunodiagnosics	The Binding Site Group Ltd.	United Kingdom	Thermo Fisher Scientific Inc. (NYSE:TMO)	2,586.5
10/27/2022	Life Science Tools	Instrumentation	E.I. Spectra, LLC	United States	United BioChannels	-
10/25/2022	Diagnostic Services	General Chemistry	Rako Science Limited	New Zealand	Asia Pacific Healthcare Group Pty Ltd	-
10/18/2022	In Vitro	Molecular Immunodiagnosics	Launch Diagnostics Holdings Limited	United Kingdom	Avacta Group Plc (AIM:AVCT)	41.8

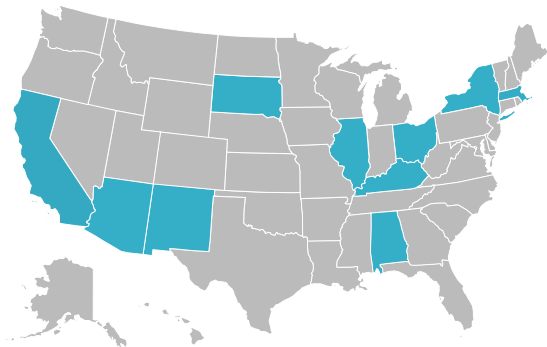
Announced Date	Segment	Sub-Segment	Target Company	Geography	Selected Buyers	Size (\$mm)
10/16/2022	Diagnostic Services	Diagnostic Imaging	Moguillansky Clinic	Argentina	Leben Salud	-
10/13/2022	Diagnostic Services	Diagnostic Imaging	Gruppo Veneto Diagnostica e Riabilitazione S.r.l.	Italy	Garofalo Health Care S.p.A. (BIT:GHC)	23.4
10/12/2022	In Vivo Diagnostics	Biometric Monitoring	DOC2U – SAS	France	Biosynex SA (ENXTPA:ALBIO)	-
10/11/2022	In Vivo Diagnostics	Imaging Diagnostics	ScanMed, LLC	United States	DirectMed Parts & Service, LLC	-
10/11/2022	In Vitro	Immunodiagnosics	Zeus Scientific, Inc.	United States	Sebia SA	-
10/1/2022	Diagnostic Services	Diagnostic Imaging	Palm Beach Radiology Institute, LLC	United States	Florida Health Sciences Center, Inc.	-

FINANCINGS

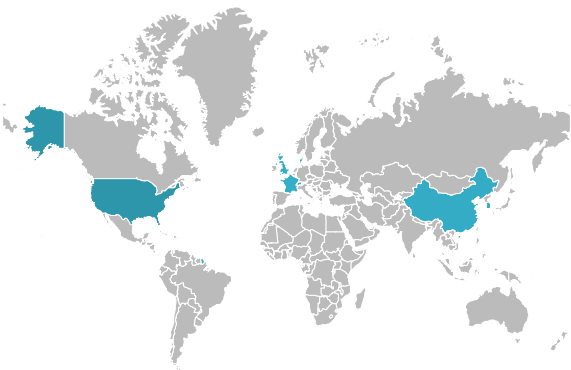
DEALS BY SEGMENT



U.S. DEALS BY STATE



WORLDWIDE DEALS BY COUNTRY



SELECTED TRANSACTIONS						
Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
10/27/2022	Life Science Tools	Consumables	OneSkin Inc.	United States	Undisclosed	12.4
10/26/2022	In Vivo Diagnostics	Imaging Diagnostics	AI Metrics, Inc.	United States	Undisclosed	1.3

Closed Date	Segment	Sub-Segment	Target Company	Geography	Selected Investors	Size (\$mm)
10/25/2022	In Vivo Diagnostics	Biometric Monitoring	Alto Neuroscience, Inc.	United States	Valor Management Corp., Novartis Pharma AG, Windham Venture Management, LLC, Apeiron Investment Group Ltd., What If Ventures, What If Ventures, Gaingels Atai Llc, Korify Capital, Inc., Vine Ventures, Lightswitch Capital Management, L.P.	35.0
10/24/2022	In Vivo Diagnostics	Biometric Monitoring	Electronic Caregiver, Inc.	United States	Undisclosed	42.5
10/24/2022	In Vitro	Hematology & Coagulation	Shaoxing PushKang Biotechnology Co.,Ltd	China	Shenzhen Huaqiaocheng Capital Investment Management Co., Ltd., Chang'an Huitong Co., Ltd., Yunion Health Investments	13.8
10/24/2022	Diagnostic Services	Specialized Testing	GeneWell	China	Green Pine Capital Partners Co., Ltd., Longping Biotechnology (Hainan) Co., Ltd., Qiwo Investment	2.8
10/21/2022	In Vitro Diagnostic Services Life Science Tools	Molecular Instrumentation	HTG Molecular Diagnostics, Inc.	United States	Undisclosed	-
10/20/2022	In Vivo Diagnostics	Imaging Diagnostics	Cerebriu A/S	Denmark	Innovation Fund Denmark	1.8
10/20/2022	In Vivo Diagnostics	Biometric Monitoring	Limber Health, Inc.	United States	Glenview Capital Management, LLC, BlueCross BlueShield Venture Partners, L.P.	11.0
10/18/2022	Diagnostic Services Life Science Tools	Specialized Testing Lab Software	Variantyx Inc.	United States	Undisclosed	20.0
10/18/2022	In Vitro Life Science Tools	Molecular Consumables Instrumentation	MiCo BioMed Co., Ltd.	Korea (Republic of)	Undisclosed	6.3
10/12/2022	Life Science Tools	Instrumentation	Pleno Inc.	United States	Deerfield Management Company, L.P. Series C, Foresite Capital Management, LLC	40.0
10/6/2022	In Vivo Diagnostics	Imaging Diagnostics	Genetesis, Inc.	United States	Ohio Innovation Fund, CincyTechUSA, Investment Arm, Mithril Capital Management LLC, Cercano Management LLC, JobsOhio, Investment Arm	17.5
10/6/2022	In Vitro	Molecular	Dx & Vx Co., Ltd.	Korea (Republic of)	Undisclosed	12.1
10/6/2022	In Vitro	Molecular	Aptamer Sciences Inc (KOSDAQ:A291650)	Korea (Republic of)	Undisclosed	11.7
10/4/2022	In Vivo Diagnostics	Biometric Monitoring	Akuity Care SAS	France	Entrepreneur First Operations Limited	-
10/4/2022	Diagnostic Services	Diagnostic Imaging	Smart Scan Medical Imaging, LLC	United States	Undisclosed	0.9
10/3/2022	In Vivo Diagnostics	Biometric Monitoring	Acurable Limited	United Kingdom	Alma Mundi Ventures, SGEIC, S.A., Kindred Capital LLP, Kibo Ventures	10.8
10/3/2022	Life Science Tools	Consumables	Alloy Therapeutics, Inc.	United States	Khosla Ventures, LLC, The House Fund, LLC, Thiel Capital, Grey House Partners GP, Presight Capital	42.0

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	1,186	10.0x	7.3x	45.2x	24.1x
Biocartis Group NV (ENXTBR:BCART)	Belgium	196	3.4x	3.2x	NM	NM
Genomictree Inc.	Korea (Republic of)	68	3.3x	NM	14.4x	NM
Guangdong HybriBio Biotech Co.,Ltd.	Hong Kong	1,149	1.7x	1.5x	3.6x	NM
Immunovia	Sweden	57	NM	19.2x	NM	NM
Oncimmune Holdings plc	United Kingdom	55	12.3x	NM	NM	NM
Qiagen N.V. (NYSE:QGEN)	Netherlands	10,543	4.7x	5.3x	11.8x	14.3x
Sansure Biotech Inc.	China	1,303	1.8x	2.0x	4.0x	3.6x
Seegene, Inc.	Korea (Republic of)	673	0.7x	1.3x	1.6x	3.8x
Tellgen Corporation	China	446	4.5x	4.0x	20.3x	11.9x
Todos Medical Ltd.	Israel	57	5.8x	NM	NM	NM
Zhejiang Orient Gene Biotech Co., Ltd. (SHSE:688298)	China	937	0.6x	NM	1.5x	NM
Mean		1,389	4.4x	5.5x	12.8x	11.6x
Median		560	3.4x	3.6x	7.9x	11.9x

Microbiology

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Accelerate Diagnostics, Inc.	United States	200	15.1x	12.5x	NM	NM
bioMérieux S.A. (ENXTPA:BIM)	France	10,592	3.1x	3.1x	11.1x	12.9x
Meridian Bioscience, Inc.	United States	1,347	3.9x	4.7x	12.9x	NM
OraSure Technologies, Inc. (NasdaqGS:OSUR)	United States	240	0.9x	0.8x	NM	16.7x
Quidel Corporation (NasdaqGS:QDEL)	United States	8,500	3.1x	2.9x	5.4x	11.6x
Sansure Biotech Inc.	China	1,303	1.8x	2.0x	4.0x	3.6x
T2 Biosystems, Inc.	United States	60	2.2x	2.5x	NM	NM
Mean		3,177	4.3x	4.1x	8.4x	11.2x
Median		1,303	3.1x	2.9x	8.2x	12.3x

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	237	3.6x	NM	35.1x	NM
Mean		237	3.6x	NM	35.1x	NM
Median		237	3.6x	NM	35.1x	NM

Hematology & Coagulation

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Beijing Succeder Technology Inc.	China	204	6.2x	NM	15.9x	NM
Quotient Sciences	Switzerland	256	6.7x	6.2x	NM	NM

Sysmex Corporation (TSE:6869)	Japan	11,089	4.5x	3.9x	18.4x	15.3x
Mean		3,850	5.8x	5.0x	17.2x	15.3x
Median		256	6.2x	5.0x	17.2x	15.3x

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	1,687	2.7x	2.1x	11.9x	9.2x
Centro de Imagem Diagnósticos S.A.	Brazil	649	3.1x	NM	21.7x	NM
Integral Diagnostics Limited (ASX:IDX)	Australia	531	2.3x	1.9x	11.1x	9.0x
Medica Group Plc (LSE:MGP)	United Kingdom	179	2.2x	2.1x	10.7x	9.5x
RadNet, Inc. (NasdaqGM:RDNT)	United States	2,581	1.9x	1.8x	8.1x	12.2x
Mean		1,125	2.4x	2.0x	12.7x	10.0x
Median		649	2.3x	2.0x	11.1x	9.3x

Specialized Testing

Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Adaptive Biotechnologies Corporation	United States	772	4.8x	3.7x	NM	NM
BGI Genomics Co., Ltd.	China	2,206	2.6x	2.8x	13.5x	9.3x
BioNexus Gene Lab Corporation	Malaysia	176	14.3x	NM	NM	NM
Burning Rock Biotech Limited	China	56	0.7x	0.6x	NM	NM
CareDx, Inc (NasdaqGM:CDNA)	United States	777	2.5x	2.2x	NM	NM
Castle Biosciences, Inc. (NasdaqGM:CSTL)	United States	406	3.7x	2.8x	NM	NM
Exact Sciences Corporation (NasdaqGS:EXAS)	United States	7,882	4.1x	3.7x	NM	NM
Fulgent Genetics, Inc.	United States	309	0.3x	0.9x	0.6x	7.8x
Invitae Corporation	United States	1,633	3.3x	3.2x	NM	NM
MDxHealth SA	Belgium	98	3.2x	1.8x	NM	NM
Myriad Genetics, Inc. (NasdaqGS:MYGN)	United States	1,489	2.2x	2.1x	NM	88.1x
Natera, Inc.	United States	4,317	6.0x	4.7x	NM	NM
NeoGenomics, Inc.	United States	1,103	2.3x	2.2x	NM	NM
Oncimmune Holdings plc	United Kingdom	55	12.3x	NM	NM	NM
Progenity, Inc. (NasdaqGM:PROG)	United States	155	NM	NM	NM	NM
Veracyte, Inc. (NasdaqGM:VCYT)	United States	1,293	4.8x	4.4x	NM	NM
Mean		1,420	4.5x	2.7x	7.0x	35.1x
Median		775	3.3x	2.8x	7.0x	9.3x

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	4,352	1.9x	1.6x	13.8x	7.9x
Dr. Lal PathLabs Limited (BSE:539524)	India	2,569	10.7x	9.6x	44.9x	37.7x
Guangzhou Kingmed Diagnostics Group Co., Ltd.	China	4,571	2.2x	2.4x	8.3x	9.0x
H.U. Group Holdings, Inc.	Japan	1,167	0.6x	0.7x	2.9x	3.8x
Instituto Hermes Pardini S.A.	Brazil	660	1.7x	1.6x	8.1x	6.9x

Integrated Diagnostics Holdings plc	Jersey	407	1.6x	2.5x	3.8x	6.0x
Laboratory Corporation of America Holdings (NYSE:LH)	United States	25,759	1.7x	1.7x	7.5x	9.9x
Medicover AB (publ) (OM:MCOVB)	Sweden	2,623	1.9x	1.7x	10.8x	10.7x
Metropolis Healthcare Limited (NSEI:METROPOLIS)	India	1,071	7.5x	7.1x	29.8x	27.1x
Quest Diagnostics	United States	20,414	2.0x	2.3x	7.5x	11.4x
Sonic Healthcare Limited (ASX:SHL)	Australia	11,518	1.9x	2.2x	6.5x	9.4x
Thyrocare Technologies Limited	India	396	5.9x	5.8x	16.4x	20.0x
Mean		6,292	3.3x	3.3x	13.4x	13.3x
Median		2,596	1.9x	2.2x	8.2x	9.6x

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	430	4.1x	9.8x	NM	NM
Schrödinger, Inc. (NasdaqGS:SDGR)	United States	1,292	7.9x	6.9x	NM	NM
Simulations Plus, Inc.	United States	716	13.3x	11.6x	40.0x	35.0x
SyntekaBio, Inc.	Korea (Republic of)	54	NM	NM	NM	NM
Mean		623	8.4x	9.4x	40.0x	35.0x
Median		573	7.9x	9.8x	40.0x	35.0x

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	557	5.8x	5.4x	22.0x	NM
Abcam plc	United Kingdom	3,672	9.1x	7.7x	36.7x	23.2x
Abnova (Taiwan) Corporation	Taiwan (Province of China)	55	4.3x	NM	24.6x	NM
Adaptive Biotechnologies Corporation	United States	772	4.8x	3.7x	NM	NM
Avantor, Inc.	United States	19,496	2.6x	2.6x	11.8x	12.4x
Bio-Techne Corporation (NasdaqGS:TECH)	United States	11,696	10.6x	9.5x	30.9x	24.0x
Bioneer Corporation	Korea (Republic of)	449	2.7x	NM	27.0x	NM
Borosil Limited (BSE:543212)	India	555	5.0x	NM	29.3x	NM
Collectis S.A.	France	71	2.5x	1.5x	NM	NM
Genscript Biotech Corporation	China	4,721	8.1x	6.7x	NM	NM
Guerbet SA	France	465	0.6x	0.6x	6.8x	4.6x
NKMAX CO., Ltd.	Korea (Republic of)	394	46.3x	NM	NM	NM
PanGen Biotech Inc.	Korea (Republic of)	53	8.8x	NM	NM	NM
Porton Pharma Solutions Ltd. (SZSE:300363)	China	2,939	3.4x	3.2x	10.2x	9.2x
Qiagen N.V. (NYSE:QGEN)	Netherlands	10,543	4.7x	5.3x	11.8x	14.3x
Repligen Corporation (NasdaqGS:RGEN)	United States	9,947	12.8x	12.2x	36.5x	38.6x
Twist Bioscience Corporation (NasdaqGS:TWST)	United States	1,401	7.6x	5.7x	NM	NM
Vitrolife AB (publ) (OM:VITR)	Sweden	2,351	9.0x	7.3x	27.7x	21.8x

Viva Biotech Holdings	China	602	1.9x	NM	11.1x	NM
Mean		3,723	7.9x	5.5x	22.0x	18.5x
Median		772	5.0x	5.4x	24.6x	18.1x
Instrumentation						
Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
10x Genomics, Inc.	United States	2,695	5.4x	4.7x	NM	NM
AnHui Wanyi Science and Technology Co., Ltd.	China	562	6.2x	NM	NM	NM
Biotage AB (publ) (OM:BIOT)	Sweden	1,077	8.3x	7.1x	32.8x	24.8x
Bruker Corporation	United States	9,640	3.9x	3.8x	17.5x	16.2x
Harvard Bioscience, Inc.	United States	164	1.4x	1.3x	19.9x	10.0x
Illumina, Inc.	United States	37,256	7.9x	7.6x	40.9x	44.9x
Mettler-Toledo International Inc.	United States	30,288	7.8x	7.8x	25.6x	23.9x
NanoString Technologies, Inc.	United States	464	3.3x	2.7x	NM	NM
Pacific Biosciences of California, Inc.	United States	1,949	14.0x	13.2x	NM	NM
Quanterix Corporation (NasdaqGM:QTRX)	United States	94	0.9x	0.9x	NM	NM
Standard BioTools Inc.	United States	296	2.7x	NM	NM	NM
Waters Corporation	United States	19,063	6.6x	6.5x	18.5x	18.4x
Mean		8,629	5.7x	5.6x	25.9x	23.0x
Median		1,513	5.8x	5.6x	22.8x	21.1x
Lab/Biobank Equipment						
Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
BICO Group AB (publ) (OM:BICO)	Sweden	326	1.8x	1.7x	NM	44.6x
Sartorius Aktiengesellschaft (XTRA:SRT)	Germany	25,116	6.3x	5.7x	19.2x	17.0x
Stratec SE	Germany	1,052	4.0x	3.6x	20.2x	15.3x
Tecan Group Ltd. (SWX:TECN)	Switzerland	4,726	4.4x	4.1x	24.3x	20.2x
Mean		7,805	4.1x	3.8x	21.2x	24.3x
Median		2,889	4.2x	3.9x	20.2x	18.6x

IN VIVO DIAGNOSTICS

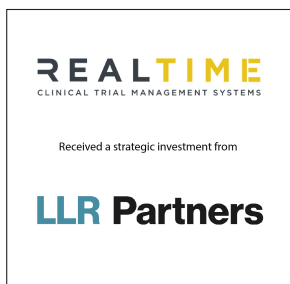
Biometric Monitoring

Company Name	Geography	Enterprise Value	xRevenue		xEBITDA	
		(\$mm)	LTM EV	FTM EV	LTM EV	FTM EV
Biotricity, Inc.	United States	75	9.4x	5.2x	NM	NM
Contec Medical Systems Co.,Ltd	China	1,310	14.7x	NM	81.3x	NM
Guangdong Transtek Medical Electronics Co., Ltd	China	211	1.1x	NM	NM	NM
iRhythm Technologies, Inc.	United States	3,755	10.4x	8.3x	NM	NM
TaiDoc Technology Corporation	Taiwan (Province of China)	413	1.5x	2.1x	3.3x	4.6x
Zhejiang Starry Pharmaceutical Co.,Ltd. (SHSE:603520)	China	1,091	3.9x	3.4x	20.4x	14.4x

Mean		1,143	6.8x	4.7x	35.0x	9.5x
Median		752	6.7x	4.3x	20.4x	9.5x
Imaging Diagnostics						
Company Name	Geography	Enterprise Value (\$mm)	xRevenue		xEBITDA	
			LTM EV	FTM EV	LTM EV	FTM EV
Siemens Healthineers AG (XTRA:SHL)	Germany	65,672	3.2x	3.0x	17.4x	15.3x
4DMedical Limited	Australia	93	NM	29.6x	NM	NM
Detection Technology Oyj	Finland	195	2.2x	1.7x	17.6x	11.0x
iRay Technology Company Limited	China	4,908	24.4x	18.5x	68.3x	42.1x
Nano-X Imaging Ltd. (NasdaqGM:NNOX)	Israel	620	NM	43.1x	NM	NM
Ray Co., Ltd.	Korea (Republic of)	171	2.4x	1.6x	39.4x	6.5x
SonoScape Medical Corp.	China	3,159	13.1x	12.3x	63.1x	48.6x
Varex Imaging Corporation (NasdaqGS:VREX)	United States	1,235	1.5x	1.4x	9.5x	8.0x
Mean		9,507	7.8x	13.9x	35.9x	21.9x
Median		928	2.8x	7.7x	28.5x	13.2x

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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