

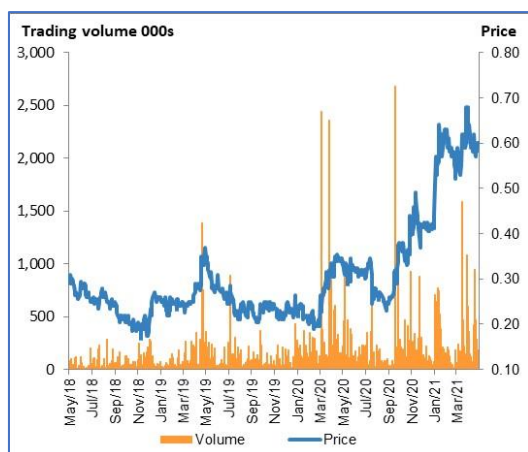
## Microbix Biosystems Inc.

MBX-T: \$0.60, MBXBF-OTC: \$0.50

25 May 2021

Bruce Krugel 416-509-5593

Price	\$0.60	Market Cap	\$73,042	
Target Price	\$1.85	Debt	\$3,906	
Projected Return	208%	Convert. Debt	\$4,500	
52 Week Range	0.72/0.225	Cash**	\$7,695	
Basic Shares (000's)	121,737	EV (\$000s)	\$73,753	
FD Shares (000's)*	180,441			
Insiders	13.0%			
Y/E September	2019	2020E	2021E	2022E
Revenues (\$000s)	13,412	10,525	20,071	32,561
EBITDA (\$000s)	1,679	165	6,210	13,148
EPS	0.00	-0.06	0.02	0.06
EV/EBITDA	43.9x	445.7x	11.9x	5.6x
*Assumes conversion of CD; **=Post equity raise				



### Profile

Microbix Biosystems Inc. (MBX-T) is a Canada-based life science company and manufacturer of viral and bacterial antigens and cell, culture-based biological products and technologies. MBX's catalogue of antigens covers +30 bacterial and viral pathogens implicated in maternal, pediatric, childhood, respiratory, sexually transmitted and insect-borne diseases. MBX is now focusing on a higher growth opportunity: its QAPs™ product line, targeting quality controls within accreditation organizations, IVD equipment manufacturers and clinical laboratories. Partners are being sought for its development asset, Kinlytic Urokinase, a biologic thrombolytic drug used to treat blood clots. MBX recently entered the high-volume viral transport media (VTM) market through a strategic relationship with the Government of Ontario. VTM sales are expected to become MBX's largest revenue stream within months of launch due to the Province's local sourcing needs and preferences.

### Disclosure

Please refer to important disclosures on page 17.

**FQ2/21: DESPITE STRONG RESULTS AND STRATEGIC BENEFIT OF CAPITAL RAISE, VALUATION GAP WIDENING PRESENTS EXCELLENT ENTRY OPPORTUNITY. REDUCING TARGET TO \$1.80 (FROM \$2.00) TO ACCOUNT FOR EQUITY OFFERING**

- Revenues.** Revenue growth of 51.5% YoY in Q2/21 was derived from all three revenue streams: The *antigen* business (+7.1%) continuing to recover off 2020 COVID-induced slow down; *QAPs™* (+251.1%) as new products gained traction aided by the expanded distribution network; and the commencement of VTM sales.
- Margins.** Gross margins continued to surprise at a strong 59.8% (due to product mix and improved manufacturing flows) which helped drive EBITDA margins of 29.6% (vs 18.0% in Q1/21). This resulted in MBX generating a record \$983k cash flow from operations.
- VTM.** Revenues commenced in Q2/21 when \$255k was shipped to a private market client. In April '21, the Ontario government placed an initial \$4.25m order to be delivered in FQ3/21 and FQ4/21. Canadian imports of Swab and VTM were US\$56.0m in 2019 (prior to COVID-19), and with MBX as the only domestic manufacturer of VTM, we believe that its expansion of manufacturing capacity to 1.0m vials/month correctly quantifies its Canadian opportunity.
- Equity raise.** In May '21, MBX closed its \$6.15m (net) equity raise. This entire amount is earmarked for facility improvements and production expansion over the next 18 months. The capacity expansion is consistent with our revenue growth forecasts (2021E:90.7%, 2022E:62.2%). The raise was strategically important for MBX—allowing it to balance its ability to currently quote on future QAPs™ and VTM business knowing capacity is expanding; and as risk mitigation – ensuring the certainty of immediate capacity expansion vs funding capex when future cash flows allow.
- Cash.** After accounting for the capital raise and significant capex, we forecast MBX will end F22 with \$8.8m cash. There is also \$16.6m due from warrants/options (\$13.3m within 26 months), suggesting that MBX will have a war chest for acquisitions, share buybacks, and to accelerate the Kinlytic urokinase commercialization.
- Valuation.** Despite having the highest revenue growth rate and highest EBITDA margin of its peers (excl. QDEL), MBX shares trade at significant discount – 5.6x EV/EBITDA and 10.0x PE ratio. Peers' F22 EBITDA forecasts have increased since the beginning of the year as these companies point to future growth despite investors anticipating a slow down due to COVID-19 vaccination roll outs.
- Target price \$1.80.** After accounting for the additional shares in issue due to the equity offering, we derive a target price of \$1.80 (formerly \$2.00) for a refinanced MBX. We attribute \$10.0m notional value for the Kinlytic urokinase development asset.

MBX reported its FQ2/21 ending 31 March 2021 on 13 May 2021. We expect MBX to report its FQ3/21 ending 30 June 2021 in the second week of August 2021.

## FQ2/21 Revenues

MBX reported its highest revenues on record, confirming traction in its QAPs™ and VTM businesses.

Strong revenue growth, which coincidentally commenced with FQ1, continued into FQ2 with MBX recording a 51.5% YoY increase (Figure 1). Primary drivers included continued recovery in the base antigen business, continued acceleration of the QAPs™ products and commencement of VTM sales, a new product line.

Figure 1: MBX FQ2/21 revenues (\$000's)

	Q2/21	Q2/20	% change	Explanation
Antigen products	2,524	2,358	7.1%	Continued recovery in base business, which commenced in FQ1/20.
QAPs™	1,495	426	251.1%	Broader product offerings, increased penetration into diagnostic test manufacturers and benefits from the expanded distribution channel.
VTM	255	-	nmf	First sales of new product line. Ontario placed \$4.25m order with shipments commencing May 2021.
Royalties	79	91	-12.5%	
<b>Total</b>	<b>4,354</b>	<b>2,875</b>	<b>51.5%</b>	

Source: Company reports; KRC Insights

nmf=not meaningful

**Antigen products.** After having declined 27.5% in F2020, antigen products, included in immunoassay tests, continue to recover, growing 7.1% YoY. Sales are made to diagnostic testing companies, some of which are included in Figure 15. MBX is participating in the recovery in diagnostic testing in general off COVID-19 induced declines (Appendix I: Peer analysis).

**QAPs™.** QAPs™ sales continued to benefit from new product introductions and new distribution agreements signed in 2020, growing 251.1% YoY. Specifically, increased uptake of MBX's COVID-19 related QAPs, especially its PROCEEDx™FLOQ® and REDx™FLOQ® products used by laboratory accreditation organizations, diagnostic test and instrument-makers and to clinical laboratories (directly and via distributors). Drivers for demand include the U.S. "CLIA" regulations, European Union IVD-D and IVD-R regulations, and ISO 15189 standards, which are encouraging labs to increase the use of quality test products from qualified third-parties across their ever-broadening portfolio of tests.

**VTM.** On 9/2/21, MBX announced initial sales of 50,000 vials of viral transport medium (VTM) to a private market client. This was followed by the 23/4/21 announcement of a \$4.25m order from the Province of Ontario.

## FQ2/21 Gross Margins

Gross margins of 59.8% were higher than our estimates of 58.6% and improved YoY (Figure 2) due to:

- **Sales mix.** Increased contribution from higher margin QAPs™ products.

- **Bioreactors.** With regards to antigens, MBX continued to benefit from the transition from roller bottle to bioreactor manufacturing.

Figure 2: MBX FQ2/21 margins

	FQ2/21	FQ2/20	Explanation
<b>Gross margin</b>	59.8%	45.9%	Improved due to higher QAPs™ sales, improving bioreactor antigen margins and initial VTM sales.

Source: Company reports; KRC Insights

## FQ2/21 Expenses

Total expenses increased slightly YoY (Figure 3) as management actively managed costs. The slight increase is due to the higher sales levels.

Figure 3: MBX FQ2/F21 expenses (\$000's)

	FQ2/21	FQ2/20
Selling and business development	198.5	161.2
General and administrative	1,116.9	832.4
R&D	216.3	277.6
<b>Total expenses</b>	<b>1,531.7</b>	<b>1,271.2</b>

Source: Company reports; KRC Insights

## Cash flow and Balance Sheet

MBX generated a record \$982k in cash flow from operations in FQ2/21, resulting in cash on hand of \$1.5m, its highest cash balance going back as far as F2015.

Referring to the cash flow statement, primary drivers contributing to the increased cash balance include:

- Record revenues, gross margins and cost management resulted in cash flow from operations of \$982k,
- \$284.4k from the proceeds of exercise of warrants, and
- \$306.5k proceeds from the Ontario Together Fund (OTF) grant (see press release of 13/10/20).

Primary drivers contributing to uses of cash include:

- A \$208.2k increase in working capital as the business ramps up, and
- \$258.8k purchase of property and equipment as MBX expands QAPs™ and VTM production capabilities. This was funded through the OTF grant.

Loans and Borrowings, both long term and short term, are shown in Figure 4. MBX does not have any short-term debt constraints bar for a \$500k non-convertible loan due in April 2022 and a \$500k convertible loan due in February 2022:

Figure 4: MBX total debt at FQ2/21 (\$'000's)

	Current	Non-current	Total	Detail
Long term debt	212.8	2,540.1	2,752.9	\$2.2m BDC loan, \$543k FEDA for SA loan
Convertible debentures	402.1	1,460.9	1,863.0	Face value \$4.5m, 9%, convert at 23c, matures 2/22-1/29
Lease liability	153.6	307.2	460.8	
Non-convertible debentures	562.2	692.7	1,254.9	Face value \$2.4m, 9% & 12%, matures 4/22 and 1/29
	1,330.7	5,000.9	6,331.6	
Equity component			2,903.8	Equity component of convertible debentures
<b>Total debt</b>			<b>9,235.3</b>	

Source: Company reports, KRC Insights

Total capital employed is shown in Figure 5. For an update, refer to the equity offering below.

Figure 5: MBX FQ2/21 total capital employed. (\$'000s)

	31/3/21
Share capital	36,108.6
Equity component of CDs	2,903.8
Contributed surplus	10,158.2
Accumulated deficit	-40,955.7
<b>Total equity</b>	<b>8,214.9</b>
<b>Total debt</b>	<b>6,331.6</b>
<b>Total capital employed</b>	<b>14,546.4</b>

Source: Company reports, KRC Insights

## Equity offering

On 28/4/21, MBX announced that it had entered into a bought deal agreement. On 19/5/21 the deal was closed and MBX raised \$6.9m gross, ~\$6.15m net. The deal was priced at \$0.60/share and each share came with a ½ warrant with an exercise price of \$0.80 exercisable for 24 months.

MBX's updated share count post financing is shown in Figure 6:

Figure 6: MBX updated share count post financing (000s)

	Shares	Options	Warrants	Convert. Deb	Total
As at Q2/21 (31/3/21)	110,237	9,979	22,739	19,565	162,520
April '21 Financing	8,333		4,167		12,500
Over allotment	1,250		625		1,875
Underwriter's commission			671		671
Non-brokered PP	1,916		958		2,875
	121,737	9,979	29,160	19,565	180,441

Source: Company reports, KRC Insights

Use of proceeds was provided as follows:

Figure 7: MBX - use of funds from equity offering

Use of proceeds	Amount
Expand Capacity for QAPs & VTM via automation & process upgrades	\$1,200,000
Facilities Upgrades and Expansion at 265, 235 & 3rd site	\$2,550,000
Upgrading, including digitization, of Production, QC, & QA processes, along with ERP systems	\$600,000
New Product and QC Testing Development	\$1,100,000
<b>Total</b>	<b>\$5,450,000</b>

Source: Company filings, Short Form Prospectus, p9

MBX's business is expected to grow substantially over the next 2 years. Its current facilities require upgrading from both from a qualitative and capacity perspective, including moving to a third site:

- **QAPs™**: Given the rapid acceleration of its QAPs business, MBX needs to automate production and expand warehouse capacity to cope with the increased volume and the required segregation of products. Based on forecast volume requirements of 1.0m vials/month, a 3<sup>rd</sup> site is anticipated in FQ2 or FQ3 of F22.
- **VTM**: Current VTM production is capped at around 450k units/month (3 shifts) with serious technical and warehousing challenges. MBX believes that there is demand in Canada alone, in excess of 1.0m units/month, and is also broadening its VTM product offering by undertaking new VTM-related product development for Canadian and other markets. This too will require automation and expansion into the 3<sup>rd</sup> site.
- **ERP system**. Expanding product lines will lead to corresponding increases in the need for, and complexity of, inventory management and management of business operations more generally.

In terms of the detail and timing of forecast capex, management provided the estimates in Figure 8 for the next 18 months. Bear in mind, MBX capex has averaged \$615k p.a. from F2016-F2020 suggesting that capex is increasing 5-fold from historical run rates in anticipation of expected new business.

Figure 8: MBX - Facilities expansion capex F21 and F22 (\$millions)

Fiscal Quarters	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Totals
Buildout and Validate a 3rd Site**				0.50	0.75		1.25
QAPs New Product Development		0.20	0.20	0.20	0.20	0.20	1.00
VTM Automation	0.40	0.40					0.80
QAPs Automation and Upscaling		0.30		0.20	0.10	0.10	0.70
Update and Rework Site 1		0.20	0.20	0.20			0.60
eQMS and ERP Upgrade and Implementation		0.20	0.10	0.10	0.10	0.10	0.60
BSL-3 Suite @ 265 (Build & Validate)		0.20	0.20				0.40
QC Automation	0.20	0.10	0.10				0.40
Final Buildout Site 2		0.40					0.40
<b>Total Uses of Funds *</b>	<b>\$0.60</b>	<b>\$2.00</b>	<b>\$0.80</b>	<b>\$1.20</b>	<b>\$1.15</b>	<b>\$0.40</b>	<b>\$6.15</b>

Source: Short Form Prospectus, p10; \*Estimates, subjected to change based on forecasts from MBX sales staff; \*\*=could happen sooner

Despite forecasting to spend an unprecedented \$6.1m cumulatively in capex over the next 18 months, if 100% of outstanding warrants and options were to be exercised by the end of F22, MBX could have as much as \$25.4m cash by the end of F22 (Figure 9).

Figure 9: MBX – potential cash proceeds from warrants/options

	Number (000s)	Weighted average Exercise price	Weighted average Remaining life*	Potential proceeds	\$000s
Cash balance at 30/9/22					\$8,829
Add:					
Options	9,979	\$0.33	3.13	\$3,293	
Warrants (existing)	22,739	\$0.36	2.34	\$8,186	
Warrants (financing)	6,421	\$0.80	2.00	\$5,137	
Proceeds if 100% exercised				\$16,616	\$25,445
Proceeds if 60% exercised				\$9,969	\$18,799

Source: Company reports, KRC Insights

\*=as at 31/3/21

However, given that the warrants and options will still have some life beyond the next 18 months (to end F22), we assume that only 60% of them will be exercised. On this basis, it is reasonable to expect that MBX could finish F22 with as much as \$18.8m cash on the balance sheet.

To underscore our point, after FQ2 quarter end, 2.0m warrants were exercised providing \$660k in cash. These figures are excluded from our calculations.

We view this potential magnitude of cash balances as a gamechanger for MBX as it would facilitate:

- The ability to negotiate larger contracts with diagnostics OEMs
- Acquisitions
- Share buy backs
- Discussions regarding the commercialization of Kinlytic Urokinase

In conclusion, the proceeds from the financing, potential proceeds from existing warrants/options, and cash generated by the business, MBX will have access to a substantial amount of cash to fund future operations, future expansion opportunities and strategic initiatives.

## Estimate Changes

Our revenue estimates for F21E were revised lower and F22E were revised upwards slightly (Figure 10), to account for the timing of VTM orders and to reflect a slightly higher QAPs™ growth rate for F22E.

## Revenues

Figure 10: MBX New vs Old Revenue Forecasts (\$000's)

Sept. year-end	2021E		2022E	
	Old	New	Old	New
Antigen products	9,557	9,644	9,844	10,415
% growth	10.0%	11.0%	3.0%	8.0%
QAPs™	4,431	6,112	6,647	12,224
% growth	190.0%	300.0%	50%	100%
VTM	11,000	4,000	16,700	9,600
% growth	nmf	nmf	51.8%	140%
Royalties	315	315	321	321
% growth	2.0%	2.0%	2.0%	2.0%
<b>Total Sales</b>	25,303	<b>20,071</b>	33,512	<b>33,512</b>
<b>Total revenue growth</b>	140.4%	90.7%	32.4%	62.2%

Source: KRC Insights

nmf=not meaningful

**Antigen products.** We have raised our growth forecasts slightly to reflect not only the continued recovery in PCR testing off COVID-19 induced slowdown, but also the potential for more testing generally given the expansion of testing capacity (refer to Appendix 1).

**QAPs™:** We have raised our growth rate assumptions for F21 and F22 as the company executes on this revenue stream. High growth rates are expected to be driven by heightened bio-vigilance and the substantially increased COVID-induced new capacity of sophisticated molecular and other testing transitioning to infectious diseases generally. We expect continued adoption of PROCEEDx (qualification of new instruments, staff training) and REDx (QC and QA in clinical laboratories) controls. More specifically:

- Broadening the QAPs™ product offering through the registration of an additional 10 products through CY21 on top of the existing:
  - Four COVID-19 vials/swabs
  - Four Human papillomavirus (HPV) test products
  - Two for sexually transmitted diseases (Mycoplasma genitalium),
- Geographic expansion into Europe targeting proficiency testing organizations. In FQ2/21, European revenues grew 63.9% YoY vs 45.5% in North America,
- New customers, including diagnostics equipment manufacturers to develop viral respiratory QAPs™ for new point-of-care instruments. We note the recent SpeeDx and Seegene® collaborations,
- COVID-19 market penetration, driven by positive and negative controls in both liquid vial and dried swab formats, and
- Strategic relationship with the COPAN Group.

**VTM.** MBX's new viral transport medium (VTM) product line (internally branded as Dx™) remains a transformational revenue stream from our perspective. Initially subject to Government of Ontario orders, but eventually expanding to include other customers.

MBX commenced Dx™ production at ~50,000 vials/week, and on 9/2/21 announced first sale of 50k vials. As a result of the \$1.45m Ontario Together Fund (OTF) grant to cover 50% of the cost to automate production, the



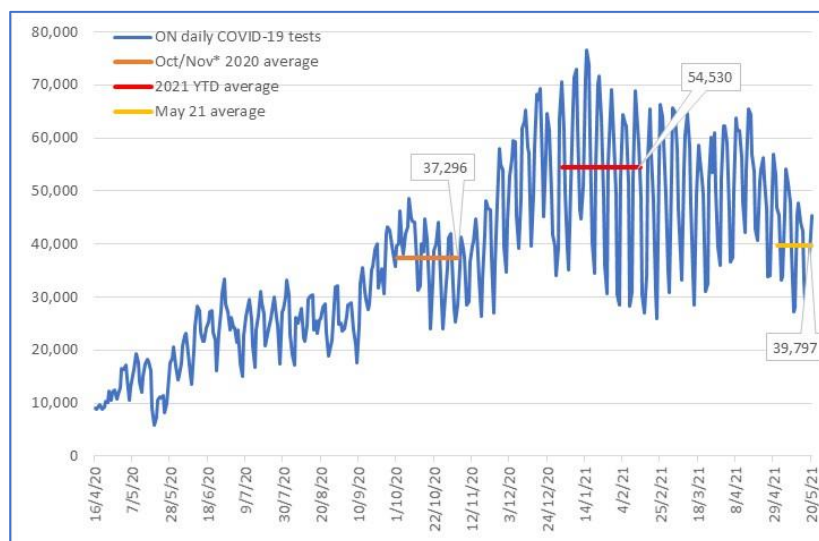
government of Ontario has first call on production, and on 23/4/21, Ontario placed its first order of \$4.25m for delivery during MBX's Q3 and Q4. We understand that the first shipment of 100k vials has already shipped.

As per Figure 8, MBX is fulfilling its commitment to spend its 50% to expand and automate production, this implies that MBX will have spent \$2.9m to meet the Ontario Government's volume commitments of 400k vials/month. In addition, MBX is developing new VTM-related products for Canadian and other markets.

As mentioned below, MBX believes that there is demand in Canada alone for 1.0m vials/month. We believe that a substantial portion of this is to meet Ontario's requirements, hence we expect follow on orders from the Government of Ontario.

To provide context for the Government of Ontario's potential VTM orders, we show the trend in Ontario's daily COVID-19 testing since commencement in April 2020 in Figure 11. The current levels of Ontario's daily testing (39.8k/day) is almost back to the levels when we initiated coverage (37.3k/day).

Figure 11: Ontario daily COVID-19 tests



Source: <https://covid-19.ontario.ca/data>; KRC Insights

We believe that MBX's production expansion to 1.0m VTM vials/month is reasonable based on:

- COVID-19 testing will not dramatically decline to zero once "all" Canadians are vaccinated as ongoing testing will potentially mimic flu tests,
- Newly Installed base of testing equipment will continue to be used, albeit its application will shift from COVID-19 testing to other infectious disease and respiratory illnesses,
- Canada imported US\$55.9m (~\$68.0m) of Swab and Viral transport medium in 2019 (Figure 12), prior to the onset of COVID. By reference to 2017-2019, Canada had no meaningful local manufacturer of VTM, inferring that these figures represent the value of Canada's annual Swab/VTM requirements. MBX is currently Canada's only meaningful volume producer of VTM and hence we believe that MBX will capture some of this market share irrespective of the trend in COVID testing.
- **In addition, MBX is in discussion with parties other than the Government of Ontario to supply their VTM needs.**



Figure 12: Canadian imports of Swab and Viral transport medium sets (US\$000s)

	Product code	2019	2018	2017
Swab and viral transport medium set	382100	55,920	56,350	52,569

Source: <https://wits.worldbank.org/trade/comtrade/en/country/CAN/year/2019/tradeflow/Imports/partner/ALL/nomen/h5/product/382100>

In summary, we believe that we are at the early stages of MBX’s historically antigen-based business being superseded by two new higher margin revenue streams: QAPs™ and VTM.

## Margins

Figure 13: MBX New vs Old EBITDA forecasts (\$000s)

Sept. year-end	2021E		2022E	
	Old	New	Old	New
EBITDA	9,427	6,210	12,957	13,148
Margin	37.3%	30.9%	38.7%	40.4%

Source: KRC Insights

Factoring in strong revenue growth, maintained gross margins and an increased cost base as the company executes on its expansion strategy, we forecast that EBITDA margins will approximate 40% for F22 (Figure 13).

## Valuation

As an overview, over the past 12 months, the MBX share price has outperformed the iShares U.S. Medical Devices ETF (IHI-N), generating a 12-month return of +73.9% return vs +33.2% of the ETF (Figure 14).

The rise in the MBX share price in early February 2021 was in reaction to the announcement of the initial VTM sales.

IHI is a ~US\$8.5bn ETF and its holdings comprise, amongst others, several MBX customers and/or companies listed in Figure 15. It offers exposure to U.S. companies that manufacture and distribute medical devices and is used to express a sector view.

Figure 14: MBX share price vs iShares U.S. Medical Devices ETF (pricing at 25/5/21)



Source: Refinitiv Eikon, KRC Insights

On a more targeted basis, MBX’s listed comparable companies are shown in Figure 15 and comprise the companies used to derive the valuation multiples used in the MBX valuation. The list includes competitor/distributor Meridian Bioscience Inc. (VIVO-Q) and immunoassay customers.

Figure 15: MBX comparable company valuations (currency per exchange, pricing at close 25/5/21)

	Symbol	Price	Mkt Cap	EV	EBITDA		Revenues		Rev	EV/EBITDA		EV/Revenues	
					2020A	2022E	2020A	2022E	Growth	2020A	2022E	2020A	2022E
<b>Microbix Biosystems Inc</b>	<b>MBX.TO</b>	<b>0.60</b>	<b>73.0</b>	<b>73.8</b>	<b>0.2</b>	<b>13.1</b>	<b>10.5</b>	<b>32.6</b>	<b>209.4%</b>	<b>445.68x</b>	<b>5.61x</b>	<b>7.01x</b>	<b>2.27x</b>
Bio Rad Laboratories Inc	BIO.N	592.93	17,666.9	16,659.6	537.4	625.1	2,545.6	2,732.5	7.3%	31.00x	26.65x	6.54x	6.10x
Bio-Techne Corp	TECH.O	420.15	16,340.3	16,288.0	233.5	409.5	738.7	1,060.2	43.5%	69.76x	39.78x	22.05x	15.36x
Danaher Corp	DHR.N	255.14	181,986.0	199,212.0	6,581.0	9,512.0	22,284.0	28,997.7	30.1%	30.27x	20.94x	8.94x	6.87x
DiaSorin SpA	DIAS.MI	142.85	7,969.4	7,688.5	385.3	417.9	881.3	1,052.6	19.4%	19.96x	18.40x	8.72x	7.30x
Meridian Bioscience Inc	VIVO.O	20.08	870.1	865.7	77.4	93.4	253.7	298.9	17.8%	11.19x	9.27x	3.41x	2.90x
Quidel Corp	QDEL.O	119.04	5,065.2	4,084.2	1,135.5	644.3	1,661.7	1,247.9	-24.9%	3.60x	6.34x	2.46x	3.27x
Thermo Fisher Scientific Inc	TMO.N	464.02	182,372.8	195,313.8	10,214.0	10,256.3	32,218.0	34,468.9	7.0%	19.12x	19.04x	6.06x	5.67x
<b>Totals/Average</b>							<b>60,583.0</b>	<b>69,858.7</b>	<b>15.3%</b>	<b>26.41x</b>	<b>20.06x</b>	<b>8.31x</b>	<b>6.78x</b>

Source: Refinitiv Eikon, KRC Insights

Within the context of determining the reasonableness/context of the current comparables’ valuation multiples as per Figure 15 (derived from each company’s F22 forecasts), we show the trend in valuation multiples (EV (enterprise value)/NTM (next 12 months) EBITDA) of this group over the past year in Figure 16. An explanation is required: Figure 15 multiples are derived from F22 EBITDA forecasts, while the Figure 16 multiple is derived from the average of NTM EBITDA forecasts of these same companies. Because it is NTM, it is a rolling multiple looking forward 12 months and updated each time forecasts are updated thereby providing a consistent and effective basis for showing the trend in valuation multiples.

The group underwent multiple expansion in the March 2020 time frame as investors priced in immunoassay companies as defensive plays as well as the COVID-19 opportunity. There has been a general decline in multiples as investors price in company-specific variables (Figure 19), but perhaps more importantly, anticipating a decline in COVID-19-related business due to increased US vaccination rates.

Figure 16: MBX comparable companies' average EV/NTM EBITDA multiples (pricing at 25/5/21)



Source: Refinitiv Eikon, KRC Insights

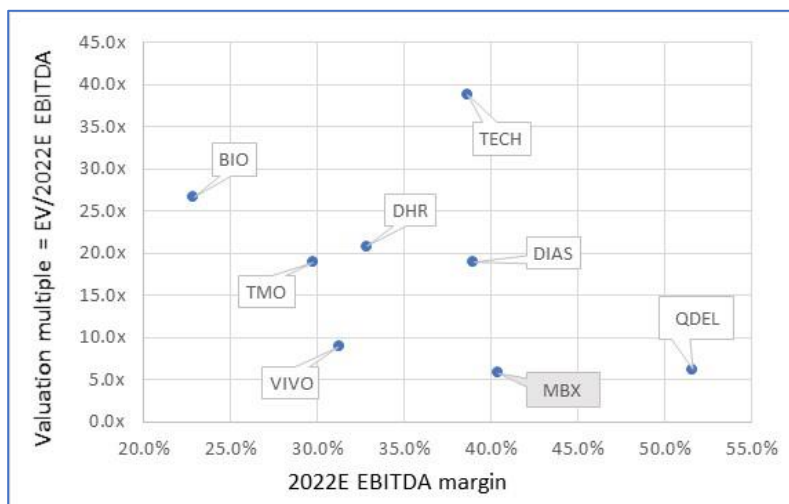
To provide some context for this view, and its impact on the peer group, in Figure 19 we show the change in F22 EBITDA forecasts from the beginning of 2021 to current to account for the time when US COVID-19 vaccination rates accelerated, and note:

- Not evident from the analysis, but worth noting: each company quantifies the direct impact of COVID-19 sales on its revenue streams,
- EBITDA forecasts for F22 have **increased** for each company (except one) implying that, while a decline in revenues due to COVID-19 is being priced in by investors, companies are suggesting that this is not occurring any time soon, and
- Companies in general note that their businesses will benefit longer term from the COVID-19 epidemic.

Hence, the multiple decline shown in Figure 16 is a function of both share price declines and increased EBITDA forecasts suggesting that there is the potential for share price recovery as investors realise that the COVID-19 decline is not as imminent and/or severe as initially thought.

We believe that the MBX share price will benefit from this realization as well.

Figure 17: MBX and comparable companies valuation multiples vs EBITDA margins



Source: Refinitiv Eikon, KRC Insights QDEL EBITDA margins decline to 27.5% in its F23

Despite being forecast to generate the highest EBITDA margin (and revenue growth rates) in our comparable company universe, MBX is attributed the lowest valuation multiple (Figure 17). To underscore the point of a depressed multiple, MBX is valued at a lower multiple than QDEL, a business in decline since revenues are forecast to decline -23% p.a. over the next 2 years, and EBITDA to decline from US\$1,256m in F21E to US\$267.7m in F23E.

Alternatively, MBX, with forecast 59% gross margins, 40% EBITDA margins and a 75.9% p.a. forecast revenue growth rate (2020-2022E) and fully financed, is trading at 10.0x our F22E EPS.

**We believe that if this valuation difference persists, MBX will be acquired.**

Our updated valuation for MBX (Figure 18) includes the following changes:

- Valuation multiple has declined,
- Using the fully diluted number of shares (per Figure 6), we have added the concomitant cash proceeds from the exercise of these instruments, and
- We raise our notional value for the Kinlytic urokinase (KU) asset to \$10m (from \$5m). We believe that MBX's increased cash position improves its negotiating stance with regards finding a commercialization partner for this asset.

**We derive a \$1.80 target price for MBX using an EV/EBITDA approach and adding \$10.0m for the KU development asset.**

Figure 18: MBX valuation (\$000s)

		New	Old
F2022E EBITDA	\$000s	13,148	12,957
Multiple	x	22.1x	23.5x
Enterprise Value	\$000s	290,430	304,349
Add: Cash 2022E	\$000s	8,829	13,078
Proceeds from warrants/options		16,616	
Less: Debt 2022E*	\$000s	2,418	3,550
Implied market cap	\$000s	313,457	313,877
Kinlytic urokinase	\$000s	10,000	5,000
MBX valuation	\$000s	323,457	318,877
FD # shares*	000s	180,441	159,281
Target price	\$	1.79	2.00
Rounded	\$	<b>1.80</b>	<b>2.00</b>
*assumes conversion of the CDs.			

Source: KRC Insights

Figure 19: MBX peer group F22 EBITDA forecasts (past 5 months vs current) and business outlook

F22 EBITDA changes		1/1/21	20/5/21	% change	COVID-19-related commentary from most recent CC
Bio Rad Laboratories Inc	BIO.N	551.3	625.1	13.4%	We continued to see strong demand for product associated with COVID-19 testing and related research. COVID sales 12.9% of 3/21 revs (\$94m/\$726.8m)
Bio-Techne Corp	TECH.O	378.5	409.5	8.2%	COVID was an estimated 3% tailwind to our business in Q3...COVID pandemic has elevated the profile and market awareness of our tools and solution offerings, positioning Bio-Techne to exit the pandemic stronger than before the pandemic
Danaher Corp	DHR.N	8,138.8	9,533.1	16.9%	For the full year 2021, we now expect to deliver high teens core revenue growth. We anticipate that COVID-related revenue tailwinds will be a high single-digit to low double-digit contribution to the core revenue growth rate
DiaSorin SpA	DIAS.MI	425.7	410.8	-1.8%	Guidance: REVENUES: growth between 15% and 25%, with ex-COVID business revenues increasing by approximately 15%
Meridian Bioscience Inc	VIVO.O	78.8	93.4	18.6%	In the post COVID world there is expected to be more rapid development of new assays. Company lowered 2021 guidance due to its voluntary withdrawal of its Revogene SARS-CoV-2 EUA application.
Quidel Corp	QDEL.O	274.2	644.3	135.0%	On 7/1/21, QDEL announced that Q4 revs to be \$808m-\$810m, up from \$476m in the prior quarter due to strong demand for COVID-19 diagnostic products. We have a powerful mix of products, partnerships and macroeconomic trends. COVID-19 testing, which represents a significant component to our near-term growth strategy, is just one aspect of the long runway ahead of us. While it's hard to model with any certainty the effect that COVID will have on our business, we are confident that there are 3 macro trends: symptomatic testing, asymptomatic screening and at-home testing that could prove to be material to both market demand and our revenue growth going forward.
Thermo Fisher Scientific Inc	TMO.N	10,098.5	10,256.3	1.6%	Coming into the year, we expected our role in supporting vaccines and therapies to represent \$1bn in revenue. Based on our orders and at the speed at which our capacity expansions are coming online, we now expect to deliver \$1.5bn in vaccine and therapy revenue in 2021. Turning to our guidance for 2021...driven by our very strong start to the year and our confidence in the full year outlook, we're raising both our revenue and earnings guidance for the full year... by \$550 million to \$35.6 billion, which represents 10% reported growth over 2020

Source: Respective March quarter conference call (CC) transcripts

Figure 20: MBX historical and forecast income statement (\$000s)

Sept. year-end	\$000's	2019	2020	Q1/21	Q2/21	Q3/21E	Q4/21E	2021E	2022E
Antigen products		11,981	8,688	2,138	2,524	2,583	2,399	9,644	10,415
% growth		-1.7%	-27.5%	9.8%	7.1%	15.0%	12.2%	11.0%	8.0%
QAPs		1,087	1,528	962	1,495	1,653	2,001	6,112	12,224
% growth			40.5%	3585.5%	251.1%	190.0%	295.5%	300.0%	100.0%
VTM					255	1,275	2,470	4,000	9,600
% growth									140.0%
Royalties		345	309	57	79	84	94	315	321
% growth		8.0%	-10.4%	-22.2%	-12.5%	2.0%	52.2%	2.0%	2.0%
<b>Total Sales</b>		<b>13,412</b>	<b>10,525</b>	<b>3,158</b>	<b>4,354</b>	<b>5,595</b>	<b>6,964</b>	<b>20,071</b>	<b>32,561</b>
Total revenue growth		7.2%	-21.5%	54.3%	51.5%	93.0%	157.4%	90.7%	62.2%
Cost of goods sold		(6,865)	(5,864)	(1,410)	(1,749)	(2,333)	(3,033)	(8,525)	(13,102)
Gross Margin		6,547	4,661	1,747	2,605	3,262	3,931	11,546	19,458
Selling and business development		(652)	(633)	(172)	(198)	(190)	(242)	(803)	(1,107)
General and administrative		(3,744)	(3,540)	(984)	(1,117)	(1,063)	(1,251)	(4,416)	(4,949)
Research and development		(1,042)	(1,013)	(198)	(216)	(263)	(326)	(1,004)	(1,368)
Total costs		(5,438)	(5,185)	(1,354)	(1,532)	(1,516)	(1,820)	(6,222)	(7,424)
Operating (Loss)/income		1,110	(525)	393	1,073	1,746	2,111	5,324	12,034
Interest paid		(1,066)	(1,056)	(262)	(266)	(250)	(302)	(1,080)	(540)
Other			(3,079)			(750)		(750)	
Net income before taxation		44	(4,659)	131	807	746	1,810	3,494	11,494
Taxation		(12)	(1,568)						
Net income		<b>32</b>	<b>(6,228)</b>	<b>131</b>	<b>807</b>	<b>746</b>	<b>1,810</b>	<b>3,494</b>	<b>11,494</b>
EPS - Basic		\$ 0.00	(\$ 0.06)	\$ 0.00	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.03	\$ 0.09
EPS - FD		\$ 0.00	(\$ 0.06)	\$ 0.00	\$ 0.01	\$ 0.00	\$ 0.01	\$ 0.02	\$ 0.06
Period-end no. shares - Basic		96,973	108,773	109,447	110,237	121,737	121,737	121,737	121,737
- FD		135,994	161,516	159,281	162,520	180,441	180,441	180,441	180,441
		<b>2019</b>	<b>2020</b>	<b>Q1/21</b>	<b>Q2/21</b>	<b>Q3/21E</b>	<b>Q4/21E</b>	<b>2021E</b>	<b>2022E</b>
Gross profit	%	48.8	44.3	55.3	59.8	58.3	56.4	57.5	59.8
Operating margin	%	8.3	(5.0)	12.5	24.7	31.2	30.3	26.5	37.0
EBITDA	\$000's	1,679	165	567	1,289	1,926	2,427	6,210	13,148
EBITDA margin	%	12.5	1.6	18.0	29.6	34.4	34.9	30.9	40.4
Effective tax rate	%	26.8	(33.7)	--	--	--	--	--	--
Net margin	%	0.2	(59.2)	4.1	18.5	13.3	26.0	17.4	35.3

Source: Company reports, KRC Insights

## Appendix I: Peer analysis – March quarter results with commentary

Company	Symbol	3/21	3/20	Change	Comments (limited to those that might pertain to MBX)
Bio Rad Laboratories Inc	BIO.N	726.8	571.6	27.1%	Raised rev. guidance for F'21 (by 1%). <b>Life Science</b> segment sales increased 61.3% to \$366.5m, driven primarily by products used to support COVID-19 research and testing. <b>Clinical Diagnostics</b> segment sales \$358.5m (+5.4% or 2.2% constant currency)...We started to see a recovery of market demand for non-COVID business.
Bio-Techne Corp	TECH.O	243.6	194.7	25.1%	<b>Protein Sciences</b> segment, where growth accelerated to 24% organically in the quarter. Our core proteomic research reagent portfolio had another strong quarter, with research use only proteins growing nearly 10% and antibodies growing in the mid-teens.
Danaher Corp	DHR.N	6,858.0	4,343.1	57.9%	Cytiva acquisition contributed 34.5% to the increase in revenues....Year-over-year core sales increased 20.0%. Diagnostics revs increased 33.9%. <b>Diagnostics</b> segment grew 33.9% as a result of COVID-19 related demand and the easing of the shutdowns and restrictions related to the pandemic which negatively impacted the comparable 2020 period, particularly in China.
DiaSorin SpA	DIAS.MI	266.7	174.6	52.7%	Molecular tests grew +270%, ELISA tests declined -34.3% due to the expected termination of the supply agreement in Q3'20, and the current decline in flu tests.
Meridian Bioscience Inc	VIVO.O	85.3	57.3	48.8%	Respiratory illness assays declined 66% to \$3.7m from \$10.9m... Life Sciences non-COVID revs up +30% YoY due business picked up from existing customers as well as recovery of the core business. Ex-COVID, company seeing continual improvement in the core.
Quidel Corp	QDEL.O	375.3	174.7	114.9%	<b>Rapid Immunoassay</b> revs incr. 148% YoY driven primarily by the Sofia SARS Antigen assay... offset by lower demand for influenza and strep A products due to a weak influenza season.
Thermo Fisher Scientific Inc	TMO.N	9,906.0	6,230.0	59.0%	Excluding forex and acquisitions, revenues increased \$3.31 billion (53%). <b>Life Sciences Solutions</b> segment revs grew 129%(137% incl. acquisitions) primarily due to demand for COVID-19 testing. <b>Specialty diagnostics</b> revs increased 69% due to higher demand primarily driven by products addressing treatment of COVID-19.

Source: Respective 10Qs and quarterly conference calls, KRC Insights



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## Appendix II: Terminology

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**Analyte:** a substance whose chemical constituents are being identified and measured.

**Antigen:** An antigen is any substance that causes your immune system to produce antibodies against it. This means your immune system does not recognize the substance, and is trying to fight it off.

**Bioreactor:** A bioreactor is an apparatus for growing organisms (yeast, bacteria, or animal cells) under controlled conditions. Used in industrial processes to produce pharmaceuticals, vaccines, antigens or antibodies.

**CE:** Conformité Européene, a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area.

**CEW:** Canada emergency Wage Subsidy.

**Clinical laboratory:** is a healthcare facility providing a wide range of laboratory procedures which aid physicians in carrying out the diagnosis, treatment, and management of patients.

**CLIA:** The Clinical Laboratory Improvement Amendments of 1988 (CLIA) regulations include federal standards applicable to all U.S. facilities or sites that test human specimens for health assessment or to diagnose, prevent, or treat disease.

**Epitope:** specific area where a specific antibody binds with an antigen.

**Immunoassays:** quick and accurate tests that can be used on-site and in the laboratory to detect specific molecules.

**Immunoglobulin:** is the most common type of antibody in blood and other body fluids. Produced by plasma cells (white blood cells).

**IVD:** In vitro device (IVD) diagnostics are tests done on samples such as blood or tissue that have been taken from the human body. These are typically regulated.

**Laboratory accreditation:** A means of determining the technical competence of laboratories to perform specific types of testing, measurement and calibration.

**LDT:** A laboratory developed test (LDT) is a type of in vitro diagnostic test that is designed, manufactured and used within a single laboratory.

**Microtiter plate:** is a flat plate with multiple "wells" used as small test tubes. The microplate has become a standard tool in analytical research and clinical diagnostic testing laboratories.

**OTF:** Ontario Together Fund.

**PCR:** polymerase chain reaction (PCR) test.

**Proficiency testing:** (PT) the performance evaluations for regulatory purposes, typically applies to laboratories and their specific tests or measurements.

**Quality controls:** also referred to quality assessment products (QAPs™), are inactivated and stabilized samples of pathogen are created to resemble patient samples in order to support one or more of (i) the proficiency testing (PT) of labs, (ii) test development, instrument validation and technical training, or (iii) quality management of patient testing by clinical laboratories.

**Roller bottle:** Cylindrical in shape, a roller bottle is used to grow and store cell cultures. Placed on a roller, roller bottles are slowly rotated and bathe cells that are attached to the inner surface of the bottle. Roller bottles are typically made of plastic or autoclavable glass.

**ToRCH:** An acronym for a group of infections that can cause significant birth defects and even fetal death. The ToRCH test measures the levels of an expecting mother's antibodies against five groups of chronic infections: toxoplasmosis, rubella, cytomegalovirus (CMV), herpes simplex virus (HSV) and other infections.

**VTM:** Viral Transport Media are vials of liquids into which swabs of patient test samples are placed. VTM preserves the stability of any virus that is present until it can be tested by the clinical lab.

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## Disclosure

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