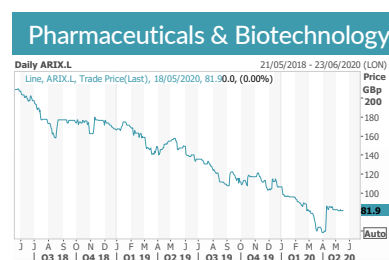




19 May 2020



Source: Refinitiv

**Market data**

EPIC/TKR	ARIX
Price (p)	82
12m High (p)	159
12m Low (p)	60
Shares (m)	135.6
Mkt Cap (£m)	110.5
NAV/share (p)	153
Premium/discount to NAV	-47%
Free Float	70%
Market	Main

**Description**

ARIX is a publicly listed biotechnology venture capital (VC) company. It provides an opportunity for all investors to participate in a balanced portfolio of diverse biotech innovation via a single stock. With a global portfolio of 16 companies and five IPOs achieved since launch in 2016, ARIX is a dynamic and modern approach to life sciences VC investing.

**Company information**

Executive Chairman	Naseem Amin
MD	Jonathan Tobin
COO	Robert Lyne
Finance Director	Marcus Karia

+44 20 7290 1050

[www.arixbioscience.com](http://www.arixbioscience.com)**Key shareholders**

Directors	0.1%
Link Fund Solutions	19.8%
Fosun	8.2%
Ruffer	6.1%
Takeda Ventures	5.5%

**Diary**

3 Jun	AGM
Aug'20	Interim results

**Analyst**

Martin Hall	020 7194 7622
<a href="mailto:mh@hardmanandco.com">mh@hardmanandco.com</a>	

# ARIX BIOSCIENCE

## 1Q'20 portfolio update

Arix Bioscience (ARIX) is a listed global venture capital (VC) company that presents an opportunity for institutional and retail investors to participate in the high risk-return profile of early-stage biotech investing. ARIX minimises risk through a combination of an expert investment team and portfolio diversification. The company announced recently a restructuring of its board of directors and executive team, which has resulted in a significant and sustainable reduction in its operating overhead, and greatly extended its cash runway. Meanwhile, all of ARIX's listed investments have updated the market with their quarterly reports.

- **Strategy:** ARIX sources investments from an established network and a strong scientific reputation. The portfolio is diversified by therapeutic area, treatment modality, stage of discovery/development and geography to balance the risk-reward profile. Value is realised when ARIX successfully exits its investments.
- **1Q'20 results:** All the listed companies in ARIX's investment portfolio have released results in the past two weeks. Significant progress has been made during the quarter and announcements have highlighted that most portfolio companies have good cash runways.
- **Iterm:** Portfolio company Iterm is expected to announce results from its Phase III trial with sulopenem in complicated urinary tract infections (UTIs) imminently, with data from uncomplicated UTIs by the end of 2Q'20. In the event of positive outcomes, Iterm is likely to strengthen its balance sheet with an equity raise.
- **ASCO:** Given that over 50% of the investment portfolio is in companies working in the field of oncology, there is likely to be a plethora of portfolio company announcements during the next two weeks, at the American Society of Clinical Oncology (ASCO) 2020 meeting, which is being held using a virtual scientific programme. News has already started with the release of abstracts.
- **Investment summary:** Global macroeconomics, affected by COVID-19, have resulted in some share price volatility among some of ARIX's listed portfolio companies; in turn causing volatility to the ARIX share price. However, while positive quarterly statements have been reflected by favourable share price movements for some portfolio companies, this has not followed through to ARIX's share price. Although the market did respond very positively to ARIX's sustainable reduction in operating costs, the shares have much further to go.

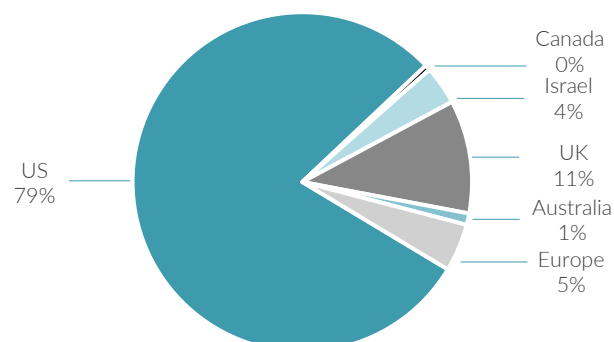
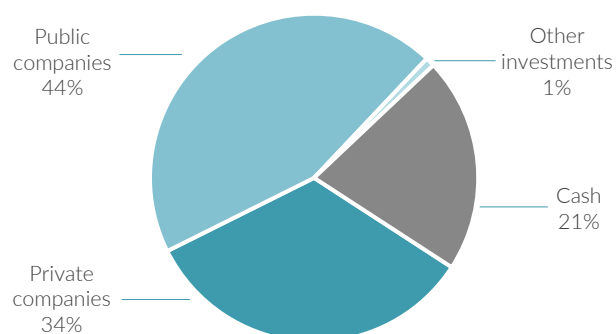
**Financial summary and valuation**

Year-end Dec (£m)	2017	2018	2019	2020E	2021E	2022E
Change in FV of investments	5.5	51.2	-58.6	*13.5	-	-
Other income	1.9	1.3	0.5	0.2	0.2	0.0
Administrative expenses	-11.0	-11.7	-9.7	-7.0	-5.5	-5.6
Operating profit/(loss)	-7.2	37.5	-70.6	4.8	-7.2	-7.6
Profit/(loss) before tax	-7.7	38.2	-69.9	5.2	-6.9	-7.3
Underlying EPS (p)	-9.5	27.2	-49.9	3.5	-4.7	-5.0
Net cash/(debt)	74.9	91.2	53.7	37.4	25.8	14.0
Capital increase	105.1	83.5	0.0	0.0	0.0	0.0
NAV/share (p)	152.3	200.4	149.1	152.6	-	-

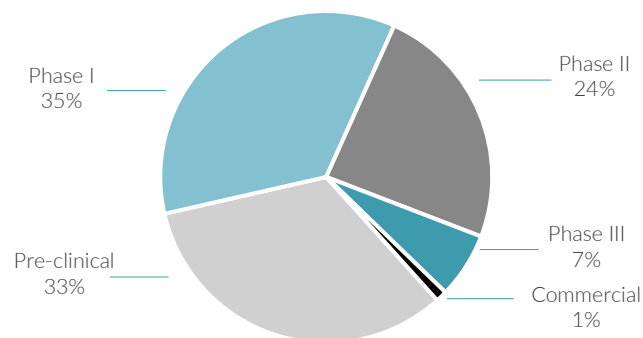
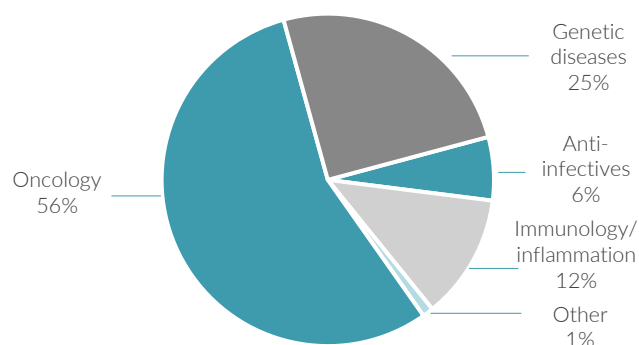
\*Based on share prices and forex at close of business on 15 May 2020

Source: Hardman &amp; Co Life Sciences Research

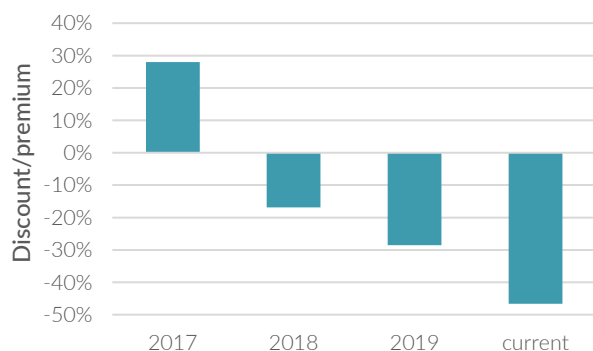
### Composition of NAV by asset and geography, 2019



### Portfolio diversification by therapeutic area and stage, 2019

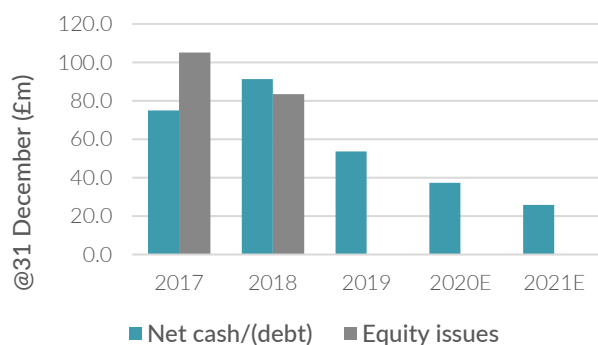


### Trading premium/discount to NAV



- ▶ ARIX floated on 17 February 2017.
- ▶ General market sentiment towards global biotech stocks has caused ARIX to trade at a discount to NAV since 2018.
- ▶ ARIX's reported NAV/share was 149p at 31 December 2019 and is currently 153p, based on movements in the share prices of listed companies in the portfolio.

### Net cash/(debt)



- ▶ ARIX recycles cash to its balance sheet on divestment of holdings in its portfolio companies.
- ▶ Reduced operating costs have significantly extended the cash runway.
- ▶ Estimates for fiscal 2020 and 2021 cash balances assume that no realisations are made. Any cash returned from investments could significantly change this position.

Source: Company data, Hardman & Co Life Sciences Research

# 1Q'20 summary

## Portfolio update

All of the listed companies in ARIX's investment portfolio have issued first updates accompanying their 1Q'20 results, except in the case of Pharmaxis (PXS.ASX), which is a half-yearly reporter. This report summarises the key features contained within these announcements to provide a better guide to the likely performance of ARIX itself. Although hugely rewarding, drug development is an expensive process; therefore, it is important to monitor the cash runways of these interesting companies.

### Listed portfolio companies – current cash runways

Company	Ticker	Gross cash at 31 March	Estimated cash runway
Autolus Therapeutics	AUTL.OQ	\$243.3m	Early 2022
Harpoon Therapeutics	HARP.OQ	*\$138.2m	2022
Imara	IMRA.OQ	\$105.9m	Mid-2021
Iterum Therapeutics	ITRM.OQ	\$23.3m	2H'20
LogicBio Therapeutics	LOGC.OQ	\$43.2m	2Q'21
Pharmaxis	PXS.ASX	A\$20.0m	1Q'21

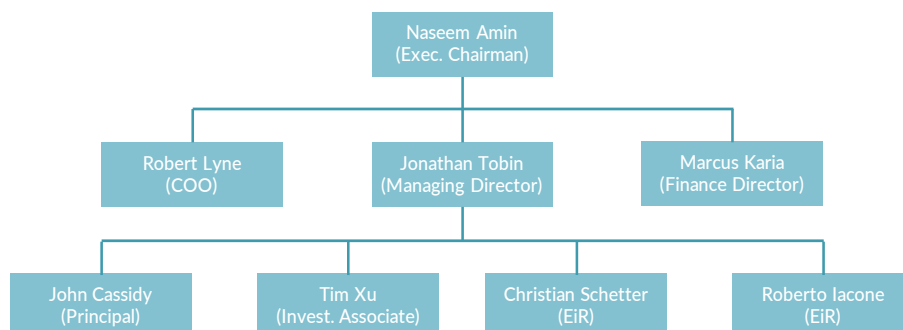
*\*Excludes \$50m milestone due from AbbVie  
Source: Hardman & Co Life Sciences Research*

As far as upcoming news flow is concerned, portfolio company Iterum is about to announce results from its Phase III trials with novel antibiotic, sulopenem. The first set of data will be from patients with complicated UTIs, which are imminent. These will be followed before the end of 2Q'20 by those from patients with uncomplicated UTIs.

## ARIX update

In early April, ARIX announced changes at the top of the group, which have resulted in a leaner board of directors consisting of just four people, and a refocused and smaller investment team, with Jonathan Tobin promoted to Managing Director. Taken together, these changes are expected to accelerate the reduction in annual administrative costs to ca.£7.0m (-28%) in fiscal 2020 and a normalised and sustainable £5.5m (-21%) in fiscal 2021.<sup>1</sup>

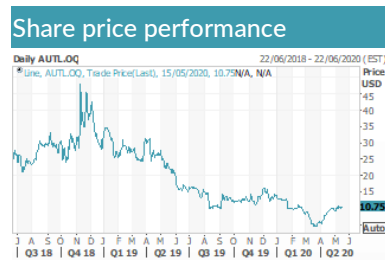
### New operating structure



*EIR = Entrepreneur-in-Residence  
Source: Hardman & Co Life Sciences Research*

<sup>1</sup> <https://www.hardmanandco.com/research/corporate-research/resetting-the-stage/>

## Autolus Therapeutics (AUTL.OQ)



Source: Refinitiv

Autolus is a clinical-stage company with a strong management team that is developing a suite of proprietary T-cell programming technologies. These are being used to engineer precisely targeted, controlled and highly active T-cell therapies that are designed to improve the recognition of cancer cells for targeted killing.

Autolus has been busy during 1Q'20<sup>2</sup>. Both the clinical trial application (CTA) and the investigational new drug (IND) submissions for AUTO1-AL1 were accepted by the MHRA and FDA, respectively, allowing pivotal trials to commence. In addition, emerging data for AUTO3 suggest this drug has a differentiated efficacy and safety profile, supporting the development work ongoing in patients with diffuse large B-cell lymphoma (DLBCL). AUTO3 has been designed to be highly active with a profile suitable for all settings of care including outpatient therapy and oncology clinics.

Autolus is expected to make a number of further announcements regarding its pipeline during 2020 as can be seen in the following graphic.

### Multiple clinical data points expected during 2020

Product	Indication	Target	Event
<b>B Cell Malignancies</b>			
AUTO1	Adult ALL	CD19	• Ph1 long-term follow up Q2 & Q4 2020 • Ongoing recruitment and dose last patient H1 2021
AUTO1NG	Pediatric ALL	CD19 & 22	• Start Ph1 H1 2020
AUTO3	DLBCL	CD19 & 22	• Ph1 data Q2 & Q4 2020 • Decision on Ph2 mid-2020
AUTO3NG	DLBCL	CD19 & 22	• Ready to start Ph1 H2 2020, life cycle mgmt
<b>Multiple Myeloma</b>			
AUTO8	Multiple Myeloma	BCMA & CAR X	• Start Ph1 study H2 2020
<b>T Cell Lymphoma</b>			
AUTO4	TRBC1+ Peripheral TCL	TRBC1	• Ph1 interim data Q4 2020
<b>GD2+ Tumors</b>			
AUTO6NG	Neuroblastoma; Melanoma; Osteosarcoma; SCLC	GD2	• Start Ph1 Q4 2020
<b>Allogeneic Approach</b>			
NA	NA	NA	• Start Ph1 Q4 2020

Source: Autolus Therapeutics

In January, Autolus boosted its balance sheet through a public offering of new shares to raise gross new capital of \$80.0m (\$74.2m net). ARIX did not participate in this funding round and its stake remains 3.37m shares. At 31 March 2020, Autolus reported gross cash of \$243.3m which, based on consensus forecasts adjusted to reconcile cashflows, is expected to give a cash runway into early 2022. ARIX has a 6.45% stake in the company.

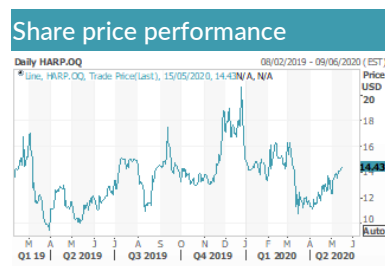
### Consensus financial summary

Year-end Dec (\$m)	2017	2018	2019	2020E	2021E
Grant income	1.7	1.5	2.9	2.2	2.5
R&D	-16.0	-48.3	-105.4	-145.0	-150.0
G&A	-5.9	-20.5	-9.2	-10.5	-11.5
Share-based payments	-3.2	-6.8	-30.2	-26.5	-30.0
Underlying EBIT	-23.4	-74.1	-142.0	-179.8	-189.0
Net interest	0.1	2.0	2.5	2.0	1.0
Underlying PBT	-23.3	-66.4	-134.9	-167.8	-176.0
Tax credit/(liability)	3.7	8.5	15.2	21.0	21.7
Net income/(loss)	-19.7	-57.9	-119.7	-146.8	-154.3
Gross cash	129.0	218.7	212.7	152.8	10.2
Equity issues	127.7	156.9	108.9	74.2	0.0

Source: Yahoo Finance, Hardman & Co Life Sciences Research

<sup>2</sup> <https://autolus.gcs-web.com/static-files/0520bb7b-10cc-4ffa-a128-25abe71d2bc4>

## Harpoon Therapeutics (HARP.OQ)



Source: Refinitiv

Harpoon is clinical-stage company developing immunotherapy for solid and blood cancers with a novel class of T-cell engagers that direct patients' T-cells to kill target cells expressing specific antigens – the Tri-specific T-cell Activating Construct (TriTAC) platform. Management has expertise in immunotherapy and biologics drug discovery and a track record in the commercialisation of cancer therapeutics.

Harpoon has also had an eventful 1Q'20<sup>3</sup>. In April, the company announced that the first patient had been dosed with HPN217 in a Phase I/II clinical trial focused on relapsed/refractory multiple myeloma. This event triggered a \$50m payment from AbbVie (ABBV.N) under its global development and option agreement.

The immune-oncology pipeline of Harpoon is shown in the following graphic. The company is expected to have four TriTAC product candidates under clinical development by the end of 2020.

Pipeline of immune-oncology programmes						
	Product Candidate	Target / Indication	Stage of Development			
			Preclinical	Phase 1	Phase 2	Phase 3
TriTAC	HPN424	PSMA / Prostate cancer	▶			Interim data to be presented at ASCO
	HPN536	MSLN / Ovarian, pancreatic and other solid tumors	▶			April 2019: Initiated Phase 1/2a clinical trial; 2020: Interim data
	HPN217	BCMA / Multiple myeloma	▶	abbvie		April 2020: Initiated Phase 1/2 AbbVie licensing and option agreement
	HPN328	DLL3 / Small cell lung cancer	▶			2020: Submit IND and Initiate Phase 1
Pro	ProTriTAC	Undisclosed	▶			ProTriTAC IND candidate

Source: Harpoon Therapeutics

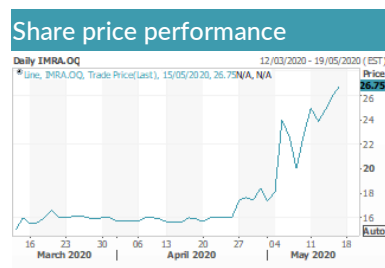
At 31 March 2020, Harpoon reported gross cash of \$138.2m, excluding the \$50m milestone payment due from ABBV. In March 2020, Harpoon filed a prospectus with the SEC announcing its intention to raise up to \$250m through any combination of securities (common stock, preferred stock, debt securities, warrants) via a number of offerings. Although nothing is imminent, if at any point a formal offer is being undertaken, a supplement with precise details will be filed with the SEC.

Consensus financial summary					
Year-end Dec (\$m)	2017	2018	2019	2020E	2021E
Collaboration/licence income	0.7	4.8	5.8	2.2	2.5
R&D	-13.6	-26.4	-41.6	-50.0	-60.0
G&A	-3.2	-5.4	-20.3	-10.5	-11.5
Share-based payments	-0.4	-0.7	-2.1	-26.5	-30.0
Underlying EBIT	-16.5	-27.7	-58.2	-84.8	-99.0
Net interest	-0.2	0.4	2.7	2.0	1.0
Underlying PBT	-16.8	-27.4	-55.6	-72.8	-86.0
Tax credit/(liability)	0.0	0.0	0.0	7.3	8.7
Net income/(loss)	-16.8	-27.4	-55.6	-65.6	-77.3
Gross cash	129.0	89.5	148.1	128.2	79.5
Equity issues	22.2	81.0	70.6	74.2	0.0

Source: Yahoo Finance, Hardman & Co Life Sciences Research

<sup>3</sup> <https://ir.harpoontx.com/news-releases/news-release-details/harpoon-therapeutics-reports-first-quarter-2020-financial>

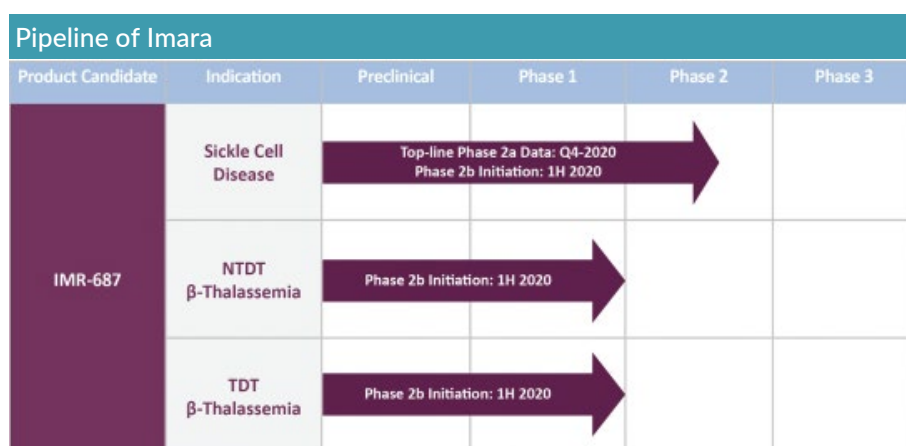
## Imara (IMRA.OQ)



Imara is a clinical-stage pharmaceutical company working on small molecule phosphodiesterase (PDE) inhibitors, which are orally active, for the treatment of sickle cell disease (SCD). SCD is caused by a mutation in the haemoglobin gene that makes red blood cells rigid, blocking their flow to organs and can lead to severe complications and early death. As such, it is an area of considerable unmet medical need both globally and in the US, where, according to the Centre for Disease Control and Prevention, there are about 100,000 cases.

During 1Q'20, Imara closed successfully its IPO on NASDAQ, with conversion of its existing convertible loan stock and the raising of gross new funds of \$86.5m (including the underwriter's option). ARIX invested a further \$3.0m/£2.3m in the IPO to retain a 9.0% stake in the company.

Also, Imara completed the enrolment of its Phase IIa clinical trial in patients with SCD, which is ongoing and headline results are expected during 4Q'20. Preparation is underway for the initiation on its planned Phase IIb trial in SCD and beta-thalassemia. Screening of patients in the US arms will begin during 2Q'20, with the aim of dosing the first patient by the end of the quarter, notwithstanding any impact from COVID-19.



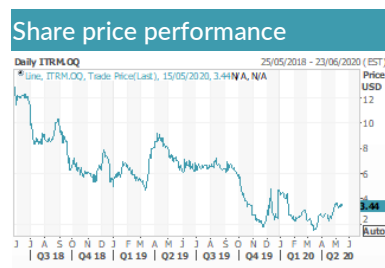
Source: Imara

At 31 March 2020, Imara reported gross cash of \$105.9m and previously outstanding convertible loan stock (\$77.8m) had all been converted into ordinary shares. Based on consensus forecasts which highlight the acceleration in R&D investment, this is sufficient to provide a cash runway through to the middle of 2021.

Consensus financial summary					
Year-end Dec (\$m)	2017	2018	2019	2020E	2021E
Revenues	0.0	0.0	0.0	0.0	0.0
R&D	-13.6	-8.2	-19.0	-44.0	-57.0
G&A	-3.2	-1.9	-4.2	-7.7	-9.1
Share-based payments	-0.4	-0.6	-0.9	-1.0	-1.0
Underlying EBIT	-17.2	-10.7	-24.1	-52.7	-67.1
Net interest	0.0	0.0	0.6	1.5	2.0
Underlying PBT	-17.2	-11.3	-23.5	-51.2	-65.1
Tax credit/(liability)	0.0	0.0	0.0	6.4	8.3
Net income/(loss)	-17.2	-11.3	-23.5	-44.8	-56.8
Gross cash	129.0	7.4	28.9	69.7	124.5
Equity issues	22.2	6.5	43.6	86.5	100.0

Source: Yahoo Finance, Hardman & Co Life Sciences Research

## Iterm Therapeutics (ITRM.OQ)

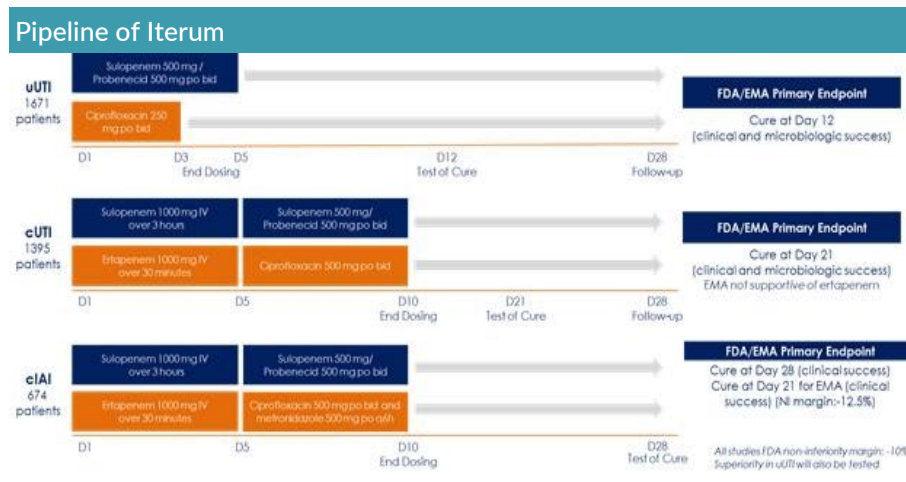


Source: Refinitiv

Iterm is a clinical-stage company focused on the development of next generation oral and IV antibiotics to treat infections caused by multi-drug resistant pathogens in both community and hospital settings. Its lead drug, sulopenem, is the first oral and IV penem antibiotic to demonstrate potent activity against a broad spectrum of gram-negative bacteria.

Sulopenem currently has Phase III trials under way in three indications: complicated urinary tract infections (UTIs), uncomplicated UTIs and complicated intra-abdominal infections. Iterm is expected to release headline data from its complicated UTI trial imminently, followed later in the second quarter by results from its uncomplicated UTI trial.

The need for new antibiotics has never been greater. The challenging environment that we are all facing currently with the COVID-19 lockdown highlights the importance of treating patients in a community setting, thereby avoiding the requirement for hospitalisation and reducing the risk of catching coronavirus.



Source: Iterm

In January 2020, Iterm undertook a \$52m private placement to support its ongoing clinical development of sulopenem. At 31 March 2020, the company had gross cash of \$23.3m, and stated that this would provide a cash runway through to 2H'20. Further funds are expected to be raised following release of the Phase III trial results mentioned above. ARIX has a 7.3% stake in the company.

Consensus financial summary					
Year-end Dec (\$m)	2017	2018	2019	2020E	2021E
Income	0.5	0.9	0.0	0.0	0.0
R&D	-25.5	-68.6	-90.8	-100.0	-100.0
G&A	-2.3	-7.5	-10.4	-11.0	-12.0
Share-based payments	-2.2	-1.3	-0.9	-1.0	-1.0
Underlying EBIT	-29.5	-76.6	-102.0	-112.0	-113.0
Net interest	0.3	-0.4	-0.9	-4.2	-7.3
Underlying PBT	-29.0	-76.6	-102.7	-106.2	-108.3
Tax credit/(liability)	-0.4	-0.5	-0.4	-0.5	-0.5
Net income/(loss)	-29.4	-77.1	-103.1	-106.7	-108.8
Gross cash	39.2	84.6	4.8	-71.7	-182.4
Equity issues	45.9	107.7	3.1	52.0	0.0

Source: Yahoo Finance, Hardman & Co Life Sciences Research



## LogicBio Therapeutics (LOGC.OQ)

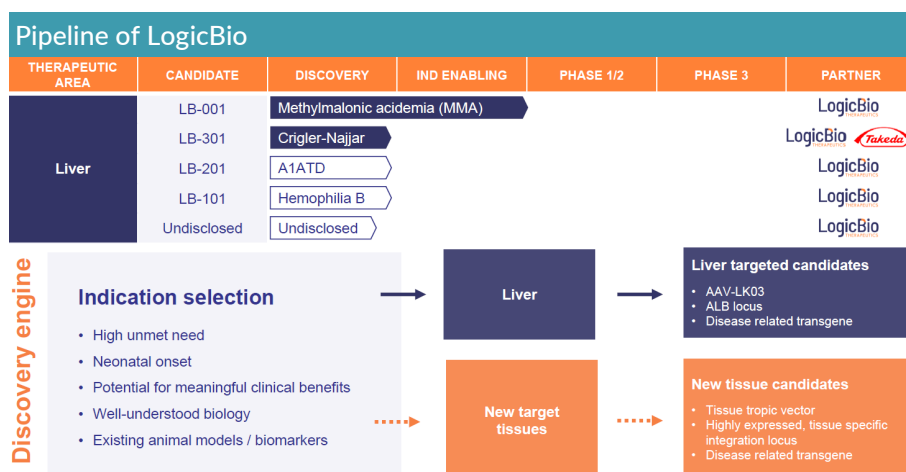


Source: Refinitiv

LogicBio is a gene-editing company focused on the fight against early onset childhood diseases. Its innovative GeneRide technology has the potential to edit the human genome, while avoiding certain risks associated with other methods of gene editing, with the aim of correcting precise locations in the genome. Being modular in design, the technology can be adapted to treat multiple rare genetic diseases. A viral vector is used to transport the corrective gene into the cells of patients, allowing the body's natural replication mechanisms to integrate it into the patient's genome.

During 1Q'20, LogicBio entered into a new research collaboration with Takeda to further develop LB-301, an investigational paediatric genome-editing therapy based on GeneRide technology. Takeda has an exclusive option to negotiate an exclusive, worldwide licence to LB-301, which is being developed for the rare disorder, Crigler-Najjar syndrome. The collaboration is excellent validation of LogicBio and should help accelerate development of LB-301 towards clinical trials.

Meanwhile, the company is committed to advancing LB-001 into humans for methylmalonic acidemia (MMA), a rare genetic condition in which the body is unable to process certain proteins and fats properly. Interaction with the FDA regarding LogicBio's IND is ongoing.



Source: LogicBio

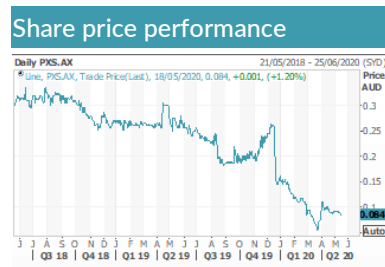
At 31 March 2020, LogicBio reported gross cash of \$43.2m, which gives the company a cash runway through to 2Q'21 based on current forecasts for working capital and capex plans. ARIX has a 13% stake in the company.

Consensus financial summary					
Year-end Dec (\$m)	2017	2018	2019	2020E	2021E
Income	0.0	0.0	0.0	5.0	7.0
R&D	-3.6	-11.1	-30.7	-32.0	-42.0
G&A	-1.8	-5.8	-8.6	-10.5	-13.0
Share-based payments	-0.5	-1.1	-1.8	-1.8	-1.8
Underlying EBIT	-5.9	-17.9	-41.0	-39.3	-49.8
Net interest	0.1	0.6	1.0	-0.5	-0.9
Underlying PBT	-5.7	-17.5	-40.1	-39.8	-50.7
Tax credit/(liability)	-0.1	-0.1	0.0	0.0	6.1
Net income/(loss)	-5.8	-17.6	-40.1	-39.8	-44.6
Gross cash	24.6	80.9	50.6	9.7	36.0
Equity issues	29.2	74.9	0.2	0.0	75.0

Source: Yahoo Finance, Hardman & Co Life Sciences Research



## Pharmaxis (PSX.ASX)



# ARIX valuation

## NAV

ARIX offers investors an opportunity to gain exposure to high-growth potential, early-stage biotechnology companies through a basket of 17 company investments, six of which are listed. Compared with direct single-stock investments, ARIX offers investors a more balanced risk-reward profile. When calculating the NAV, ARIX adheres to IPEV guidelines in the valuation of its portfolio. At the close of business on 15 May 2020, the NAV was £206.9m, or 153p per share based on its current investment portfolio, which comprises:

- ▶ **Core portfolio:** Consisting of 11 companies with a total book value of £159m (77% of NAV), of which the six listed companies represent £117m.
- ▶ **Discovery portfolio:** Consisting of five companies with total book value of £18.1m (3.8% of NAV).
- ▶ **Other interests:** Totalling just £3.3m (1.4% of NAV).
- ▶ **Cash:** Gross cash of ca.£40.0m, of which ca.£2.0m is ring-fenced for existing portfolio company investments.

Given that the current market capitalisation of ARIX is just £110.5m (15 May 2020), the market appears to be valuing ARIX stock on the basis of cash (£40m) and only 40% (£70.5m) of the book value of ARIX's core portfolio companies. Given that there is increasingly positive momentum behind life sciences companies in the COVID-19 environment, the current 47% discount to NAV should be viewed as an opportunity, especially given the news flow expected to be announced by portfolio companies in the coming months.

## Peer comparison

The concept of listed investment vehicles dedicated to specialist investment in early-stage life sciences companies has evolved in the past decade, managed by experienced investment teams, with the aim of reducing the risk. A group of listed European investment vehicles has been constructed to allow valuation comparisons to be made with that of ARIX. The pitfall is that some of these companies have been operating over considerably longer times spans, have different investment approaches, an enormous differential in the number of companies in their portfolios, and are focused on different therapeutic areas. However, they do provide a guide regarding current discounts.

Peer comparison								Comment
Company	Type	Price	Mkt. cap.	Cash	Debt	NAV	NAV premium / (discount)	
Arix Bioscience	LVC	82p	£111m	£40m	-£1m	£207m	-47%	Oncology, immunology, anti-infectives, genetic diseases 17 assets, 6 listed, global portfolio
IP Group	IPCC	54p	£574m	£161m	-£90m	£1,127m	-49%	LS 58%, Technology 36%, Multi-sector 6% 55 LS assets valued at £627m (56% NAV)
Malin Corp.	IPCC	€ 2.90	£133m	£31m	-£55m	£385m	-65%	Oncology, immunology, genetics 71% focus (4)/29% growth (6)
PureTech	Hybrid	225p	£642m	£114m	-	-	-	R&D model to develop new medicines focused on the Brain-Immune-Gut UK-focused portfolio
Syncona	LVC	199.2	£1,322m	£872m	-£16m	£1,340m	-1%	Gene & cell therapy, Biologicals, small mol. Top 4 assets = 90% of LS investments

IPCC = IP commercialisation company, LVC = listed VC, LS = Life Sciences

Prices and currencies taken at close of business on 15 May 2020

Source: Hardman & Co Life Sciences Research

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