Pharmaceuticals & Biotechnology

Source: Refinitiv

Market data	
EPIC/TKR	**CIZ**
Price (p)	**2.8**
12m high (p)	10.0
12m low (p)	2.2
Shares (m)	253.4
Mkt cap (£m)	7.0
EV (£m)	6.3
Free float	79%
Country of listing	UK
Market	LSE Main

Description

Cizzle Biotechnology is a medical device company developing diagnostic tests for the early detection of cancer and companion diagnostics for autoimmune disease. Its first test will be used alongside a positive chest scan to confirm presence of lung cancer and reduce the high rate of false positives.

Company information

Executive Chair	Allan Syms
NED/Founder	Dawn Coverley
CFO	Nigel Lee
NED	John Treacy

www.cizzlebiotecnology.com

Key shareholders

Directors	5.3%
Yorkshire Cancer Research	12.4%
University of Sheffield	4.3%
University of Leeds	4.3%
University of York	3.2%

Diary

Apr'22	2021 results

Analyst

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CIZZLE BIOTECHNOLOGY

Strategic alliance in China

Cizzle Biotechnology (Cizzle), focused on cancer diagnostics, was spun out of the University of York to exploit the biomarker, variant CIZ1b, for early detection of different forms of lung cancer. There is high medical need for a simple blood test, to be used alongside a positive chest scan, that allows early detection of lung cancer. This should result in a significant reduction in the number of false positives, reduce the number of scans and improve patient outcomes. Cizzle has converted a memorandum of understanding (MoU) with partners in China into a full strategic alliance for the development and commercialisation of its lung cancer test in China.

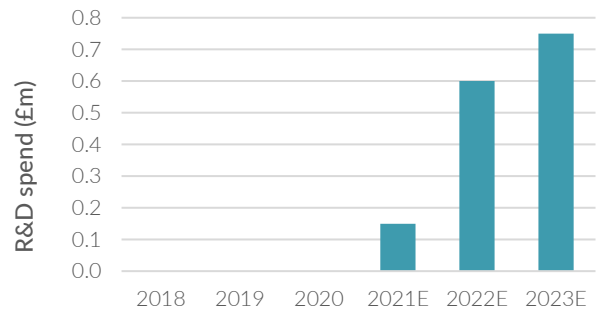
- **Strategy:** Cizzle is a diagnostic company that is progressing a biomarker diagnostic assay, which aims to deliver a simple blood test for lung cancer that can pick up the disease earlier to improve the chances of survival, and to greatly reduce the need for unnecessary follow-up tests and tissue biopsies.
- **MoU:** In November 2021, Cizzle announced an MoU with the International Co-Innovation Centre for Advanced Medical Technology (iCCAMT) and Shenzhen Intelliphecy Life Technologies Co., Ltd. (Intelliphecy) for the development and commercialisation of its CIZ1b-based early lung cancer biomarker test in China.
- **Full agreement:** Cizzle has converted this MoU into a full commercial deal. The partners will be responsible for all development, manufacturing, regulatory and commercial activities in China. Cizzle will be paid for the supply of antibodies and reagents used in the test, and will receive a royalty of 10% on net sales.
- **Risks:** Cizzle is a small company with a single asset and limited resources. Portfolio expansion through partnerships and royalty agreements has expanded its income opportunities and reduced risk, but future success is dependent on additional partnerships and out-licensing deals being signed.
- **Investment summary:** Since listing, Cizzle has delivered a reasonable stream of news, particularly with collaborations and strategic partnerships that accelerate the number and magnitude of potential income streams. Despite this, the shares have underperformed, leaving the company trading on an EV of just £6.3m. Key to changing investor sentiment will be delivery of the monoclonal antibodies needed for the commercial test, which will also trigger the development in China.

Financial summary and valuation

Year-end Dec (£000)	2018	2019	2020	2021E	2022E	2023E
Sales	0	0	0	0	0	0
SG&A	-54	-22	-15	-350	-500	-550
R&D	0	0	0	-150	-600	-750
Other income	51	0	0	0	1,000	0
Underlying EBIT	-3	-22	-15	-520	-150	-1,550
Statutory EBIT	-3	-22	-15	-3,744	-150	-1,550
Underlying PBT	-3	-22	-15	-521	-151	-1,551
Statutory PBT	-3	-22	-15	-3,745	-151	-1,551
Underlying EPS (p)	-0.9	-6.9	-4.8	-0.3	0.0	-0.6
Statutory EPS (p)	-0.9	-6.9	-4.8	-2.3	0.0	-0.6
Net cash/(debt)	20	13	-3	860	662	-626
Equity issues	0	0	0	2,200	0	0

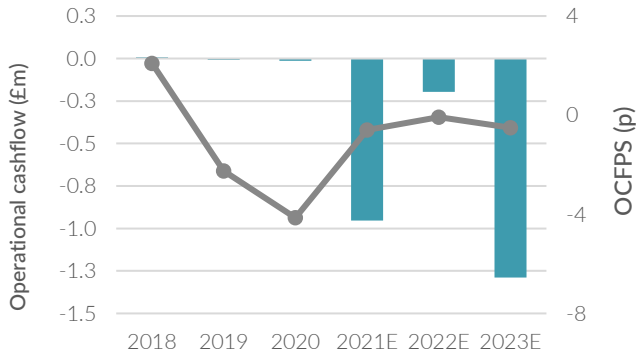
Source: Hardman & Co Life Sciences Research

R&D investment



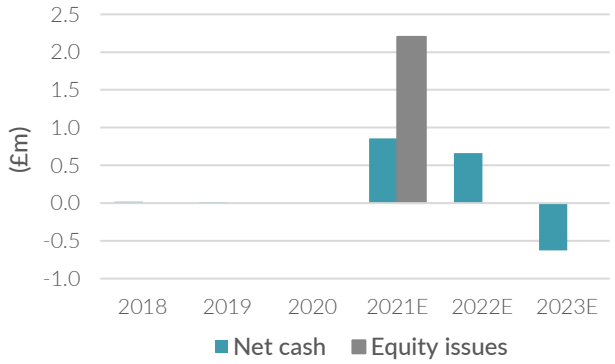
- Cizzle has successfully developed a prototype CIZ1b biomarker test on very limited resources.
- Much of the elucidation and understanding of CIZ1 was undertaken with grant funding.
- R&D investment will ramp up once funding is in place to develop the commercial CIZ1b biomarker test based on mAb direct-ELISA.
- Forecast R&D for 2021 has been reduced from £250k to £150K due to timing differences, but the delta has been added on to the spend in fiscal 2022.

Operational cashflow and OCFPS



- Cizzle will have two costs: R&D investment and the general corporate overhead.
- Some R&D tax credits can be expected, but payment by HMRC is usually 6-12 months in arrears.
- Given that much of the work will be outsourced, Cizzle will have only modest working capital requirements.
- Timing of receipt of the initial £200k from St George Street Capital has been moved from December 2021 into 1Q'22.

Net cash and equity issues



- The prospectus stated that the *proforma* net cash position was £1.89m, based on the balance sheets of both Cizzle and Bould at 30 June 2020.
- After allowing for expenses associated with the acquisition, fundraise and listing, we believe the net cash position was ca.£1.75m at the time of Admission.
- Forecasts suggest that this will provide a cash runway of 18-24 months and that further funds will be required towards the end of 2022.

Source: Company data, Hardman & Co Life Sciences Research

Opportunity in China

Background

The primary goal of Cizzle is to expand on the scientific work originally undertaken by Professor Coverley and her team at the University of York regarding the role and understanding of variants of Cdkn1A-interacting zinc finger protein 1 (CIZ1) in many common cancers, through the development of diagnostic tests – in particular, variant CIZ1b, for the early detection of different forms of lung cancer.

Lung cancer is generally first identified from a chest scan. Patients with suspicious scans then undergo further tests. However, these often result in false positives that require two-year follow-ups. Eliminating 50% of these could help patients and generate substantial cost savings for healthcare providers.

At the end of November 2021, Cizzle announced an MoU with iCCAMT and Intelliphecy for the development and commercialisation of its CIZ1b-based early lung cancer biomarker test in China. Following discussions over the past few weeks, Cizzle and its partners have now converted this into a full commercial agreement.

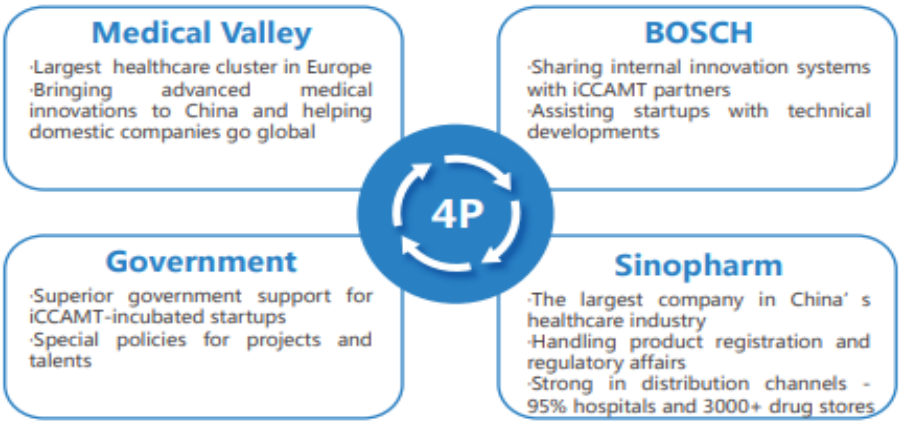
iCCAMT

iCCAMT has good provenance with world-leading expertise, having been founded by Medical Valley Germany, Robert Bosch GmbH, Sinopharm Group and local governments, with the aim of solving technical issues for innovative startups and accelerating global medtech innovation in China. As products evolve towards regulatory approval, iCCAMT assists with technology transfer and the establishment of local manufacturing.

iCCAMT partners

Source: iCCAMT website

iCCAMT 4-Partners ecosystem



Source: iCCAMT website

iCCAMP is based in Shanghai, providing an appropriate climate and infrastructure to promote innovation.

iCCAMT eco-chain for innovation

Source: iCCAMT website

Terms of the deal

The deal is good from Cizzle's perspective, because it promotes the development of its CIZ1b-based diagnostic test for lung cancer at little cost to the company, secures supply agreements for monoclonal antibodies and reagents used in the test, and will bring future royalties on sales.

- The partners are responsible for funding all activities in China, including the development, clinical trials, manufacturing of commercial test kits, and distribution of the product.
- Initial development will commence within 60 days of Cizzle supplying the immunoreagents to its partners in China.
- Cizzle will supply, and be paid for, all the monoclonal antibodies and reagents used in the test, for security and quality control.
- Cizzle is to receive a 10% royalty on net sales of all products and services using its proprietary CIZ1b technology.

Lung cancer in China

According to the World Health Organisation (WHO) and the National Cancer Research Centre[1], lung cancer is the leading cause of cancer-related mortality in China and has been increasing over the past decades. This has created a massive challenge for the government and health bodies, with significant effort and favourable policies for screening and prevention. Indeed, one of the aims of iCCMAT is to accelerate product development and clinical trials to achieve early adoption within major cancer centres throughout China. The other partner, Intelliphecy, is aiming to innovate technologies in the hope of winning the war against cancer, aspiring to out-smart cancer cells through artificial intelligence (AI).

- Lung cancer accounts for 20% of all cancer diagnoses in China each year.
- There are an estimated 785,000 new cases of lung cancer annually in China, and the WHO forecasts that this may rise to one million cases p.a. by 2025.
- In 2015, an estimated 630,500 patients in China died with lung cancer being cited as the primary cause, accounting for 27% of all cancer deaths.
- Compared with statistics in the rest of the world, lung cancer in China is found in a relatively younger age group, which is though to be attributed to air pollution and smoking.

Test status

Since listing, Cizzle has continued to evolve its prototype test towards a commercial product with CE marking. Critical to this is the development and supply of proprietary monoclonal antibodies and reagents that will be the foundation for protein detection in its ELISA-based test, optimisation of the reagents and buffer environment, and validation of the test with a retrospective trial. The antibody development work is currently being undertaken by its partner, FairJourney Biologics.

Conclusion

Through various partnerships and collaborations, Cizzle is aiming to maximise the value of its lung cancer asset. The strategic alliance in China paves the way towards its test becoming available in the largest lung cancer market in the world, at little cost to the company. This deal represents another example of the company expanding its commercial opportunity and potentially accelerating its income streams.

[1] Dianqin Sun *et al*., Cancer burden in China: trends, risk factors and prevention. *Cancer Biol Med.* 2020 Nov 15; 17(4): 879–895. doi: 10.20892/j.issn.2095-3941.2020.0387

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