

#### Stock Data

Share Price: 37.5p  
Market Cap: £43.5m  
Shares in issue: 115.95m

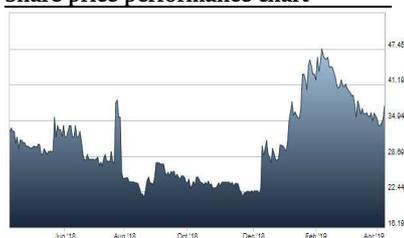
#### Company Profile

Sector: Healthcare  
Ticker: AVCT  
Exchange: AIM

#### Activities

Avacta is a biotechnology company which has developed the proprietary Affimer® technology platform, a unique engineered alternative to antibodies. Affimer proteins can be developed quickly for drug development and a wide range of life sciences applications in the diagnostics and research sectors.

#### Share price performance chart



Source: LSE

#### Turner Pope contact details

Turner Pope Investments (TPI) Ltd  
6th Floor  
Becket House  
36 Old Jewry  
London  
EC2R 8DD

Tel: 0203 621 4120  
Email: [info@turnerpope.com](mailto:info@turnerpope.com)  
Web: [www.turnerpope.com](http://www.turnerpope.com)

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Barney Gray Research analyst  
Tel: 0203 621 4120  
[barney@turnerpope.com](mailto:barney@turnerpope.com)

## Avacta Group plc

Avacta's interim results demonstrate that the company is making solid progress with its in-house therapeutic programmes and first-in-man clinical data for its Affimer therapeutic platform is expected in late 2020. This is underpinned by the company's recent commercial agreements with LG Chem Life Sciences and Tufts University Medical School, among several others, which have the potential to deliver long term revenue growth to the company.

Avacta's core Affimer therapeutic programme focused on the field of immuno-oncology (I-O) is progressing well and the company remains on track to deliver first-time-in-human clinical data for the platform in late 2020. We note that its lead programme, a PD-L1 antagonist will feed into two others: a bi-specific PD-L1/LAG-3 therapy which follows close behind and has the potential to be a considerably more valuable asset than a monotherapy alone; and into a novel drug conjugate being developed with Tufts.

During the interim period, Avacta agreed an Affimer therapeutics development partnership and licence agreement with LG Chem Life Sciences which could be worth in excess of US\$300m plus future royalties on product sales. This multi-target agreement provides for upfront payment of US\$2.5m and near-term milestone payments of up to a further US\$5.5m in addition to longer term development milestones totalling US\$180m to the company. Avacta has also outlined that it may receive an additional US\$130m in option fees and milestone payments should LG Chem elect to exercise its options for additional Affimer targets in the future.

In regard to the company's collaboration with Tufts, whereby the parties have established a new class of drug conjugate combining an Affimer PD-L1 inhibitor with a powerful chemotherapy in one molecule, Avacta notes that it is on track to generate efficacy data in animal models for the first TMAC (Tumour Micro-environment-Activated Conjugates) molecule by the end of 2019.

Post period end, Avacta's partner, Moderna exercised its option to enter into an exclusive licencing agreement with Avacta in regard to certain Affimers against a potential therapeutic target. Under the terms of the exclusive agreement with Moderna, Avacta may receive undisclosed payments upon clinical development milestones and royalties in connection with future product sales.

On the Research and Diagnostics Reagents side of the business, Avacta's licensing deal with New England Biolabs (NEB), which allows NEB to commercialise products using the Affimer technology, has the potential to generate future royalty payments. Avacta has other ongoing paid-for technology evaluations with several global companies although it acknowledges that the timing of such agreements is largely in the hands of third parties.

With this in mind, Avacta is pursuing an Affimer services model and is generating its own diagnostic Affimer assets to be developed to the point of working assays before seeking licensing deals. The company's intention is to shorten the lead times to market readiness and royalties. Short term revenue is already being generated by the company.

With a core focus to deliver first-time-in-human data for its Affimer therapeutic programme in late 2020, Avacta is well funded to drive progress following a £10.9m net fund raise in July 2018. This is complemented by the establishment of several key commercial agreements which represent the longer-term foundations of the group in addition to in-house initiatives to provide near term revenue growth.

## Financial results comment

Avacta reported revenue of £0.97m for the six months ended January 2019. This compares to £1.47m for the comparable period in 2018. Revenue generated by the company's Affimer business, Avacta Life Sciences declined to £0.29m in H1 2019 from £0.69m in H1 2018 and revenue from Avacta Animal Health, the allergy and diagnostic testing business was £0.69m, marginally below the £0.78m reported in the previous interim period.

The decline in the Life Sciences revenue was due to a planned reduction in funded research services income following the successful transition of Affimer targets into Moderna's internal development team. We note that the funded research service income associated with the new LG Chem development programme commenced post period end in February 2019 and will contribute to revenue in the second half of the current financial year. This programme included an upfront payment of \$2.5m which was received shortly after the agreement was concluded. However, under IFRS15 accounting rules, this payment will be recognised over the initial three years of the agreement.

### Income statement summary, half year to January (£'000)

Income statement (Period ended Jan)	H1 2019A	H1 2018A
Life Sciences revenue	286	692
Animal Health revenue	686	774
<b>Total revenue</b>	<b>972</b>	<b>1,466</b>
Cost of sales	-308	-458
<b>Gross profit</b>	<b>664</b>	<b>1,008</b>
R&D	-2,414	-1,477
Admin	-4,122	-4,003
<b>Operating profit</b>	<b>-5,872</b>	<b>-4,472</b>
Finance income	23	23
<b>Profit before tax</b>	<b>-5,849</b>	<b>-4,449</b>
Taxation	650	500
<b>Profit after tax</b>	<b>-5,199</b>	<b>-3,949</b>

Source: Avacta, RNS

### Operating costs

Avacta expensed £2.41m of research and development (R&D) costs over the interim period associated with the expanded in-house Affimer therapeutic programmes. In line with other therapeutics-based companies within the sector, these costs are expensed at the pre-clinical stages of development.

Avacta capitalised £1.07m of development costs, primarily relating to the Affimer reagents and diagnostics development programmes. These costs are reflected in the company's intangible asset value on the balance sheet overleaf.

Administration costs, which include business development expenditure, depreciation and amortisation, facilities and share based payments increased only marginally from £4.0m to £4.1m and the company reported an operating loss of £5.87m compared to £4.45m in H1 2018.

A loss before tax of £5.85m was offset partially by a tax credit of £0.65m in the first half of 2019. Avacta claims each year for R&D tax credits which, since it is loss making, it elects to surrender for a cash rebate. This reduced the loss after tax to £5.2m for the interim period against a loss of £3.95m in H1 2018.

### Cash flow and balance sheet

At the end of January 2019, the company reported cash of almost £11.8m compared to £8.28m at the end of January 2018. The operating cash outflow was £2.9m in H1 2019 compared to £3.6m in the comparable period in 2018. However, net proceeds of almost £10.9m from the issue of shares during the period boosted the group's cash balance. Net assets as of 31 January 2019 were £27.3m, up from 26.2m at the end of H1 2018 and the group remains debt free.

### Balance sheet for year ended July (£'000)

Balance sheet (Year-end July)	H1 2019A	H1 2018A
Intangible assets	12,714	12,775
PPE	2,912	3,390
<b>Total non-current assets</b>	<b>15,626</b>	<b>16,165</b>
Inventories	173	181
Trade receivables	1,188	1,639
Income taxes	2,342	1,700
Cash and cash equivalents	11,787	8,275
<b>Total current assets</b>	<b>15,490</b>	<b>11,795</b>
<b>Total assets</b>	<b>31,116</b>	<b>27,960</b>
Trade creditors	3,789	1,443
Contingent consideration	0	340
<b>Total current liabilities</b>	<b>3,789</b>	<b>1,783</b>
<b>Total liabilities</b>	<b>3,789</b>	<b>1,783</b>
<b>Net assets</b>	<b>27,327</b>	<b>26,177</b>

Source: Avacta, RNS

## Avacta's business model

Avacta's focus is its proprietary Affimer<sup>®</sup> technology, a novel engineered alternative to antibodies. Antibodies are blood proteins produced in response to and counteracting specific antigens. In particular, they combine chemically with substances which the body recognises as alien such as bacteria, viruses and foreign substances in the blood to trigger an immune response.

By contrast, Affimer technology is based on a much smaller human protein which can be developed quickly to bind with high specificity and affinity to a range of targets. Affimer proteins can be developed as therapeutic molecules and can be used in a wide range of other life sciences applications within research and diagnostics (a device or substance used for the analysis or detection of diseases or other medical conditions).

Avacta is developing Affimer technology for both the therapeutic and non-therapeutic markets, focusing on building a profitable business through licensing Affimer reagents to research tools and diagnostics developers in order to power their own products. Coupled with this, Avacta is also developing a pipeline of Affimer therapeutic candidates for in-house development and licensing.

The management believes that Affimer technology is a disruptive, next generation platform for drug development and diagnostics and Avacta ultimately has the potential to take significant market share away from the \$100 billion market currently dominated by the antibodies-based platform.

Avacta has demonstrated the efficacy of Affimers since acquiring the technology in 2012 and the company's progress over the last seven years has de-risked the platform to the point where Affimers are demonstrated to work well and often surpass the efficacy of antibodies in many applications.

## Operational review

### Affimer Therapeutics

Avacta has demonstrated good progress over the first six months of the current year against its stated objectives which are:

1. Develop the first Affimer candidate for clinical development
2. Build a pipeline of therapeutic Affimers and enabling Affimer platform technologies for licencing or future in-house development
3. Secure long term partnering and licensing deals
4. Grow an Affimer revenue stream with the potential for long term royalties

#### **Progress towards first-time in-human studies**

Avacta's therapeutic programme continues to focus on the immuno-oncology (I-O) sector and the company has selected an inhibitor of PD-L1, arguably one of the most well understood immune checkpoints, as its lead programme. Avacta's aim is to dose patients in a Phase 1 dose escalation study in Q4 2020. In order to achieve this relatively tight timetable, the company will shortly initiate manufacturing development of its candidate PD-L1 antagonist (AVA004-251) to allow IND (Investigational New Drug) enabling studies to be completed in 2020 leading to an IND/CTA (Clinical Trial Agreement) filing in later 2020.

At the same time, Avacta is developing a PD-L1/LAG-3 bi-specific molecule with the aim of taking this therapy into the clinic as soon as possible. Avacta believes that the bi-specific application against the two targets could have considerable potential for partnering deals and can be used as part of the novel drug conjugate programme with Tufts.

In preparation for this ramp up in clinical development activity, the group appointed the highly experienced, Dr Jose Saro in December 2018 to the role of Chief Medical Officer to oversee these programmes.

#### **Building a pipeline of drug assets**

Avacta notes that single cancer immunotherapies have limited overall response rates and combining immune checkpoint modulators such as PD-1 and PD-L1 with chemotherapy improves patients' responses.

The company's collaboration with Tufts, whereby Avacta has combined its immune checkpoint antagonists with Tufts' chemotherapies, has established a new class of drug conjugate. This novel technology combines an Affimer PD-L1 inhibitor with a powerful chemotherapy in one molecule whereby the chemotherapy works to attract the patient's immune system to the tumour, and the PD-L1 inhibitor helps the immune system when it arrives.

Avacta notes that it is on track to generate efficacy data in animal models for the first TMAC (Tumour Micro-environment-Activated Conjugates) molecule by the end of 2019. The company also states that the TMAC platform could also be expanded to include other immune checkpoint modulators and pro-inflammatory drugs. This anticipated progress is protected by a joint patent application between Avacta and Tufts and Avacta believes that this collaboration has the potential to develop a long-term pipeline of highly differentiated drugs in the future.

### **Drug development collaborations – LG Chem Life Sciences**

In October 2018, Avacta agreed an Affimer therapeutics development partnership and licence agreement with LG Chem Life Sciences; part of the South Korean LG Group. This multi-target agreement provides for upfront payment of US\$2.5m and near-term milestone payments of up to a further US\$5.5m in addition to longer term development milestones totalling US\$180m to the company. Avacta will also receive royalties on any future product sales and LG Chem will cover the company's research and development costs associated with the collaboration. Avacta has also outlined that it may receive an additional US\$130m in option fees and milestone payments should LG Chem elect to exercise its options for additional Affimer targets in the future.

As part of the agreement with LG Chem, Avacta will generate and conduct early stage optimisation of Affimer drug candidates against multiple undisclosed targets. LG Chem and Avacta will then collaborate to progress these candidates towards drug selection. It has been agreed that LG Chem will be responsible for pre-clinical and regulatory studies, clinical development and world-wide marketing of any resulting products. LG Chem intends to make the first regulatory filing for an Affimer therapeutic in 2021.

### **Other important collaborations**

In February 2019, Moderna exercised its option to enter into an exclusive licencing agreement with Avacta in regard to certain Affimers against a potential therapeutic target. Avacta and Moderna entered into a collaboration, licence and option agreement in 2015 under which Moderna was granted exclusive access to Avacta's Affimer technology for certain collaboration targets.

Moderna was also granted the option to enter into exclusive licence agreements on pre-agreed terms to further research, develop and commercialise Affimers selected by Moderna. Under the terms of the exclusive agreement with Moderna, Avacta may receive undisclosed payments upon clinical development milestones and royalties in connection with future product sales.

Avacta's collaboration with Oncosec is progressing although this is behind the schedule originally envisioned and the company's collaboration with Iksuda (formerly Glythera) has been put on hold to allow both parties to focus their respective resources on their lead pre-clinical programmes.

## Affimer Research Reagents and Diagnostics

Avacta is confident that Affimer technology has commercial and technical benefits in markets outside therapeutics and is making solid progress in securing licensing deals to generate long term revenue through the sale by third parties of products containing Affimers instead of antibodies.

Avacta's licensing deal with New England Biolabs (NEB), announced in Q4 2018, is an agreement which allows NEB to commercialise a product using the Affimer technology for use in life science research and diagnostics assays. Avacta will receive royalties on these products sales.

Avacta has other ongoing paid-for technology evaluations with several global diagnostics companies, research tool providers and bioprocessing companies and the group anticipates further licensing deals in 2019 although the timing of such agreements is largely in the hands of third parties.

### **Affimer services model**

With this timing uncertainty in mind, Avacta is pursuing an Affimer services model and is generating its own diagnostic Affimer assets to be developed to the point of working assays before seeking licensing deals. The company's intention is to shorten the lead times to market readiness and royalties and short-term revenue is already being generated by the company.

Avacta has been running a marketing campaign in the interim period and currently has multiple Affimer services projects ongoing and more in the pipeline. With each project worth approximately £40,000 in revenue and thousands of monoclonal antibody drugs in development, the potential market size, although fragmented, could amount to several millions of pounds to the company over the longer term.

In parallel with this, Avacta is also making progress generating Affimers for its in-house diagnostic assay development and aims to have two diagnostic assays, for which there are well understood commercial opportunities, completed by the end of the calendar year.

### **Avacta Animal Health**

Trading has been broadly in line with the same period last year and the company has positive expectations for H2, particularly from the allergy business. In particular, the contract research business is developing with several partners and seeking to utilise the skills and services that Avacta's development scientists offer.

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