

Market data	
EPIC/TKR	AVCT
Price (p)	91.5
12m High (p)	138.0
12m Low (p)	83.0
Shares (m)	68.4
Mkt Cap (£m)	62.6
EV (£m)	43.0
Free Float*	57%
Market	AIM

*As defined by AIM Rule 26

Description

Avacta is a pre-clinical stage biotechnology company developing biotherapeutics based on its proprietary Affimer protein technology which benefits from near-term revenues from research and diagnostic reagents

Company information

CEO Alastair Smith
 CFO Tony Gardiner
 Chairman Trevor Nicholls

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 www.avacta.com

Key shareholders

Directors	4.2%
IP Group	24.8%
Henderson	11.8%
Aviva	9.8%
Baillie Gifford	7.7%
Ruffer LLP	7.1%

Events

17 Oct	Hardman report
Jan-17	AGM
Apr-17	Interims

Analysts

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Avacta

Immunotherapy advances: Affimers join CAR-T

Avacta is the proprietary owner of Affimer technology for the development of bio-therapeutics, diagnostic tests and research reagents. Affimers represent a radical alternative to established antibody technology which dominates the drug industry despite its limitations. During 2016, Avacta has made considerable progress towards its strategic goal to have a first-in-man Affimer therapeutic by the end of 2019. Progress has been made in all three of its areas of therapeutic interest, with the announcement that Avacta has tied up with the Memorial Sloan Kettering Cancer Center to investigate Affimers in CAR-T cell immunotherapies.

- ▶ **Strategy:** To commercialise its Affimer technology through a combination of bespoke research tools, collaborative deals and by identifying and developing its own proprietary therapeutic Affimer lead compounds. With £19.5m on deposit, the company has the resource to deliver on its stated strategy.
- ▶ **CAR-T collaboration:** Avacta has announced a collaboration with Dr Renier Brentjens, Director of Cellular Oncology at the Memorial Sloan Kettering Cancer Center (MSKCC) in New York and one of the founders of Juno Therapeutics, to develop a CAR-T therapy based on Affimer technology.
- ▶ **Commercial:** The initial target will be Affimers that bind to CD 19 antigens which play an important role in clinical oncology. Consequently, several companies are targeting CD 19 antigens in their drug development programmes, and this field has resulted in a number of significant licensing deals with drug majors.
- ▶ **Intellectual property:** Avacta owns all the proprietary rights to Affimer technology including any CD-19 binders that are put into the relationship for testing. Any results generated directly from this collaboration will be shared between Avacta and MSK.
- ▶ **Investment summary:** In 2015, Avacta embarked on a strategy to identify and develop Affimers as therapeutics with the aim of having a first-in-man candidate by 2019. Given its resources, it has identified and adopted a specific therapeutic strategy. The collaboration announced today means that Avacta has made research progress during 2016 with each of its selected therapeutic targets.

Financial summary and valuation						
Year end July (£m)	2014	2015	2016	2017E	2018E	2019E
Sales	3.18	1.81	2.17	3.00	3.40	3.80
EBITDA	-1.33	-2.34	-4.59	-6.20	-6.68	-7.26
Underlying EBIT	-1.86	-2.91	-5.39	-7.50	-8.03	-8.66
Reported EBIT	-2.07	-5.57	-5.66	-7.80	-8.36	-9.03
Underlying PBT	-1.83	-2.89	-5.29	-7.43	-7.99	-8.67
Statutory PBT	-2.04	-5.54	-5.57	-7.72	-8.32	-9.04
Underlying EPS (p)	-3.07	-4.50	-6.46	-9.59	-10.24	-11.05
Statutory EPS (p)	-3.57	-9.84	-6.86	-10.03	-10.72	-11.58
Net (debt)/cash	11.48	7.33	19.52	11.58	2.82	-6.61
Capital increases	14.54	0.02	21.05	0.00	0.00	0.00
P/E (x)	-	-	-	-	-	-
EV/sales (x)	-	-	-	-	-	-

Source: Hardman & Co Life Sciences Research

Hitting strategic goals

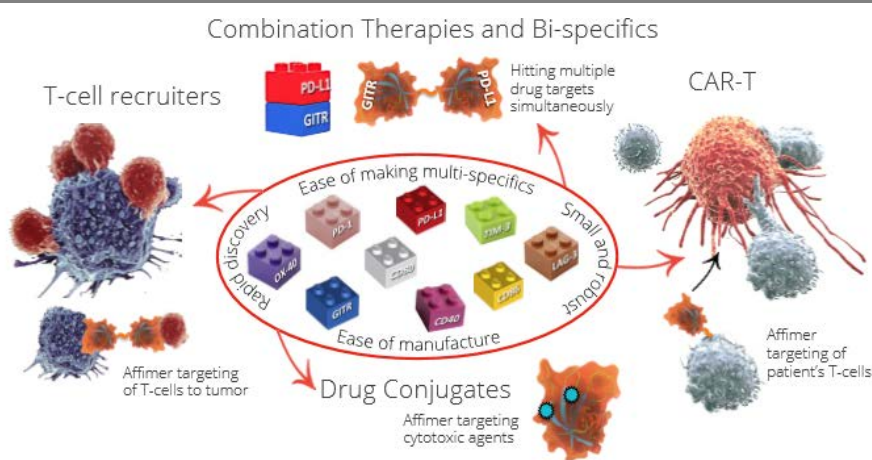
Affimer therapeutics strategy

Based on the success of antibody-derived therapeutics which have developed over a 15 year period into a \$70.4bn market globally, Avacta took the strategic decision in 2015 to embark on a discovery programme to generate its own therapeutic leads based on Affimers®. Although there are many antibody drugs on the market and in the late stages of development, some of their limitations are increasingly apparent, proving that they are not the answer to every disease and that a step change in the form of engineered biomolecules is required to generate the next wave of drugs, hence the move towards bi-specific and tri-specific antibodies, or alternatives to antibodies. During 2016, Affimers has been shown to represent a very credible alternative and Avacta is the only company in the world with this proprietary technology.

Avacta is not attempting to compete against antibodies but to apply Affimer technology to areas that, for various reasons, are not accessible to antibodies. The company is targeting three approaches and the announcement today demonstrates that the company has made progress in all three areas over the course of this year:

- ▶ **Affimer Drug Conjugates** – Avacta has tied up with Glythera to combine the advantages of Affimers with Glythera’s proprietary conjugation chemistry (July 2016)
- ▶ **Chimeric antigen receptor (CAR) –T cell immunotherapy** – Avacta has announced a collaboration with Memorial Sloan Kettering Cancer Centre (MSKCC), NY to evaluate Affimer technology in novel CAR-T cell-based immunotherapy (November 2016)
- ▶ **Bi-specific and T-cell recruiters** – Work ongoing, with positive pre-clinical results for Avacta’s PD-L1 T-cell recruiter therapy recently announced (September 2016)

Affimer therapeutics strategy



Source: Avacta

Avacta has delivered strategic progress on all of its own Affimer therapeutics targets, which represents an additional angle to that of out-licensing its Affimer technology for other areas e.g. Moderna Therapeutics, and non-therapeutic uses of Affimer reagents for life sciences research.

CAR-T research

Avacta has confirmed a new research collaboration for development of a novel class of CAR-T immunotherapy that has the potential to provide significant advances on the current antibody-fragment approach.

- ▶ New CAR-T collaboration with MSKCC, a world-renowned centre for oncology treatment and research, based in New York
- ▶ Developing Affimer technology for CAR-T cell therapy represents a promising advance on antibody fragment-based CAR-T immunotherapy

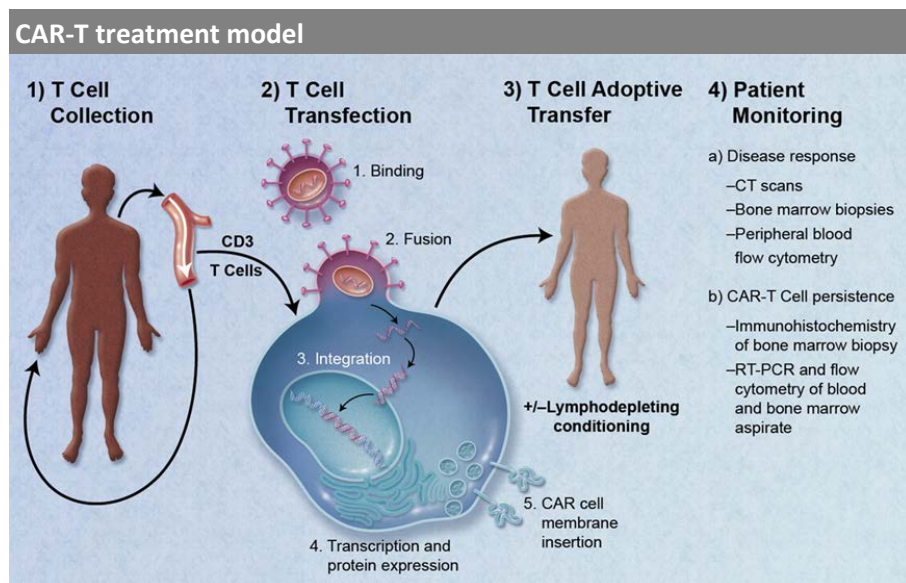
Collaboration with Memorial Sloan Kettering Cancer Center

Research will be carried out in partnership with Dr Renier Brentjens, the Director of Cellular Oncology at MSKCC, who has a great deal of expertise in CAR-T cell therapies. His pre-clinical and clinical research interest is focused on the further development of CAR modified T cells designed to overcome the hostile immunosuppressive tumour microenvironment through the generation of 'armoured CAR-T cells'. Of particular interest, Dr Brentjens was a scientific co-founder of Juno Therapeutics (JUNO), a NASDAQ-listed biotech company that is developing cell-based cancer immunotherapies based on CAR-T cell technologies, with eight drug candidates currently in clinical trials. Therefore, the fact that this specialist is willing to enter a research collaboration involving Affimers in his area of expertise is highly significant.

Intellectual property arising from this collaboration will be shared between Avacta and MSK, which is expected to generate significant future opportunities for Avacta to partner and license the technology towards clinical development.

Affimer CAR-T technology

Affimers are engineered scaffold protein alternatives to antibodies. Initially, a lymphoma therapy proof-of-concept study will be performed: Avacta will develop Affimer molecules that bind CD19, a lymphoma specific B-cell currently one of the main targets of JUNO, that will be used by Dr Brentjens' team to modify T-cells. The anti-tumour function of the modified T-cells will be tested in *in vitro* and in *in vivo* animal models of lymphoma.



Source: Jacobsen CA and Ritz J (2011) 'Time to put the CAR-T before the horse' *Blood* 118:4761-4762

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