



21 January 2019

**Market data**

EPIC/TKR	AVO
Price (p)	38.5
12m High (p)	64.0
12m Low (p)	31.0
Shares (m)	169.6
Mkt Cap (£m)	65.3
EV (£m)	58.3
Free Float*	48%
Market	AIM

*As defined by AIM Rule 26

Description

Advanced Oncotherapy (AVO) is developing next-generation proton therapy systems for use in radiation treatment of cancers. The first system is expected to be installed in Harley Street, London, during 2019; it will be operated through a JV with Circle Health.

Company information

Exec. Chairman Michael Sinclair
CEO Nicolas Serandour

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www.avopl.com**Key shareholders**

Board & Management	13.0%
Yantai CIPU	26.5%
Brahma AG	5.3%
AB Segulah	3.8%
Hargreaves Lansdowne	3.6%
Handelsbanken	3.5%

Diary

2Q'19 Finals
1H'19 Harley Street ready

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ADVANCED ONCOTHERAPY

Important regulatory milestone: ISO approval

AVO's goal is to deliver an affordable and novel proton therapy (PT) system, based on state-of-the-art technology developed originally at the CERN. Achievement of major technical milestones has boosted confidence, and the group remains on track with its strategy. AVO has integrated successfully the four types of structure that constitute the LIGHT accelerator and has recorded the proton beam at an energy of 52MeV, sufficient to treat superficial tumours. AVO has just achieved an important regulatory milestone by receiving ISO 13485 accreditation, demonstrating the company's commitment to safety and high quality, and further endorsing the team's ability to meet its objectives.

- ▶ **Strategy:** AVO is developing a compact and modular PT system at an affordable price for the payor, financially attractive to the operator, and generating superior patient outcomes. AVO benefits from the technology know-how developed by CERN and ADAM, Geneva, and relies on a base of world-class suppliers.
- ▶ **ISO approval:** ISO 13485 is an internationally agreed standard that sets out the requirements for a quality management system specific to the medical devices industry. It can also be used by internal and external parties, such as certification bodies, to help them with their auditing processes.
- ▶ **Development update:** Infrastructure to support the installation and assembly of the full LIGHT system has already started at STFC's Daresbury Laboratory. Once the complete system has been installed and validated, it will be used to support AVO's submission for CE marking, prior to first patients in 2020.
- ▶ **Risks:** With the £10m funding announced in December, AVO is maintaining its ability to meet its objectives and keep the pace of its manufacturing plan. Execution risk remains, but the more complex technical challenges have been overcome, and integration of the remaining units is an easy step towards getting the LIGHT accelerator.
- ▶ **Investment summary:** Demand for PT is increasing worldwide, and the need for a small, flexible, affordable and close-to-patient system is desirable. AVO has attracted strong manufacturing and investment partners, and discussions with potential customers are advancing. Progress at the flagship Harley Street site has been substantial, and installation of the first LIGHT system is planned to start in mid-2019. The latest technical update has brought further assurance and boosted confidence.

Financial summary and valuation

Year-end Dec (£000)	2015	2016	2017	2018E	2019E	2020E
Sales	0.0	0.0	0.0			
Administration costs	-6.6	-11.2	-12.9			
Milestones/upfronts	0.0	0.0	0.0			
EBITDA	-6.4	-10.8	-12.6			
Underlying EBIT	-6.6	-11.2	-12.9			
Reported EBIT	-8.5	-13.1	-14.5	Forecasts under review		
Underlying PBT	-6.7	-11.3	-14.9			
Statutory PBT	-8.6	-13.2	-16.5			
Underlying EPS (p)	-7.1	-13.9	-15.6			
Statutory EPS (p)	-12.3	-14.4	-18.9			
Net (debt)/cash	8.0	0.9	-9.2			
Capital increase	21.1	13.5	7.3			

Source: Hardman & Co Life Sciences Research

In line with best practice

ISO 13485:2016 certification

As far as the International Organisation for Standards (ISO) is concerned, safety and quality are non-negotiable in the medical devices industry. Regulatory requirements are increasingly stringent throughout every step of a product's life cycle, including service and delivery. Therefore, industry manufacturers are expected to demonstrate that their management processes are of the highest quality and in line with 'best practice'. ISO 13485:2016 certification is recognition that these high standards are being followed. Compliance with ISO certification is a pre-requisite for getting CE marking approval and the authorisation to sell the LIGHT system in Europe.

Who is ISO 13485 for?

ISO 13485 is designed to be used by organisations involved in the design, production, installation and servicing of medical devices – such as an instrument, machine, implant or *in vitro* reagent – intended for use in the diagnosis, prevention and treatment of diseases or other medical conditions. It can also be used by internal and external parties, such as certification bodies, to help them with their auditing processes.

Certification to ISO 13485

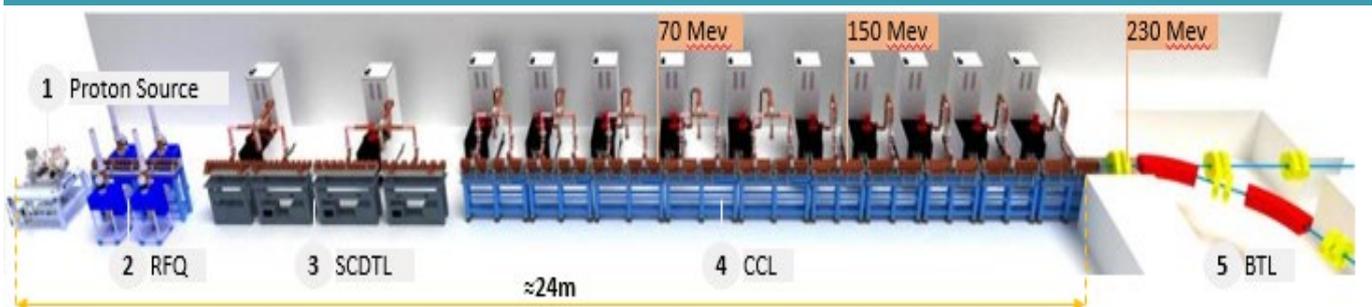
The ISO certification is undertaken by a third party that has independently examined the management processes and validated that the company has met the requirements of the standard.

AVO has announced that it has received ISO 13485 certification from Lloyd's Register, an independent compliance specialist, following an audit of its processes. Certification of this standard represents an important milestone in the development of LIGHT, demonstrating the company's commitment to safety and high quality.

Development update

Enormous progress was made during 2018, and AVO hit a number of milestones that greatly de-risked the whole project. LIGHT has reached the stage where the four components (the proton source, the RFQ, the SCDTLs and the CCLs) that constitute the accelerator have been integrated at its Geneva testing site and accelerated the proton beam to an energy level of >50MeV, which would be sufficient to treat superficial tumours. While certain testing is still being undertaken, on a broader front, sufficient testing has taken place to show proof-of-concept.

LIGHT accelerator



Source: Advanced Oncotherapy investor presentation

Next steps

A number of actions will be undertaken during 2019 to generate the first complete LIGHT system, which will be used to obtain regulatory approval, via CE marking:

- ▶ **Daresbury site:** In May 2018, a lease was signed between AVO and the UK Government's Science and Technology Facilities Council (STFC) to establish a UK testing and assembly site at Daresbury (Cheshire). The facility will be used to test and assemble a complete and operational version of the LIGHT system for verification and validation for regulatory approval (CE Mark).
- ▶ **Geneva:** The ADAM site in Geneva is where AVO's R&D facility is located. Sufficient testing has been undertaken to provide proof-of-concept, and the design of all the accelerating structures has been validated.
- ▶ **LIGHT:** The infrastructure work has already started at Daresbury, together with the assembling of the LIGHT system, as both are meant to be built in parallel. The concrete shielding for the proton injector and RF test bunkers is already in place, and delivery of the components has already occurred.

Power transformer delivered to the STFC site at Daresbury



Source: STFC on Twitter, 16 January 2019

AVO is in regular discussions with its Notified Body. On completion of the verification and validation of the LIGHT system, AVO expects to receive CE marking from the Medical and Healthcare products Regulatory Agency (MHRA). Important within this process is the third-party ISO 13485 certification, which demonstrates to regulators that AVO has met the stringent requirements of the standard. We expect AVO to have all the accelerating structures of LIGHT integrated before end-2019, with submission for CE marking happening afterwards. This system will then be dismantled for re-construction at the Harley Street site, with the expectation of first treatments in 2020.

Funding update

In December 2018, AVO announced its intention to raise £10.0m gross new capital through the issue of 25.0m new Ordinary shares at 40p per share, via a Subscription with existing and new shareholders. Admission to AIM is conditional on the passing of certain resolutions at a general meeting to be held today. The subscription was led by DNCA Investments, which is investing £4.8m into the company, giving it 6.2% of the enlarged share capital.

Following the Admission on AIM of the Subscription shares, AVO will have 194.566m shares in issue.

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