



## PureTech Health's Vedanta Licenses Microbiome-Derived Immuno-Oncology Product Candidates

November 1, 2017

PureTech Health plc ("PureTech", LSE: PRTC), an advanced, clinical-stage biopharmaceutical company, is pleased to note that Vedanta Biosciences, an affiliate of PureTech Health, has exclusively sub-licensed key intellectual property to develop and commercialize microbiome-derived cancer immunotherapies based on live biotherapeutics.

These live biotherapeutics have been shown in preclinical models to activate CD8+ T cells, a type of white blood cell that is the predominant effector in cancer immunotherapy. The tumour-fighting effects of checkpoint inhibitors were also significantly amplified in these models when the bacterial consortia were combined with a variety of checkpoint inhibitors. Vedanta is now working to advance its lead, orally-administered product candidate, which contains the proprietary defined bacterial consortia, and is planning to file an IND in 2018.

Joe Bolen, PhD, Chief Scientific officer of PureTech Health, said: "We're pleased to announce the addition of this novel microbiome immuno-oncology program to our growing cancer therapeutics pipeline. This unique immunomodulatory approach has the potential for broad clinical utility and adds an important new dimension to our cancer immunotherapy pipeline, which includes targeting solid tumour-derived mediators of immune suppression and tumour-associated immunosuppressive gamma-delta T cells as well as cell-based and biologics-based therapeutics for a broad range of hematologic malignancies. We look forward to the rapid advancement of this program as both a possible monotherapy and in combination with a variety of marketed and experimental cancer immunomodulatory therapeutics."

The full text of the announcement from Vedanta Biosciences is as follows:

### **Vedanta Biosciences to Advance Cancer Immunotherapy Candidates Based on Microbiome-Derived Live Biotherapeutics that induce CD8+ T Cells**

*Company exclusively licensed key intellectual property from JSR Corporation in Japan, based on Dr Kenya Honda's discoveries*

*IND filing for lead immuno-oncology candidate planned for 2018*

**CAMBRIDGE, Massachusetts, November 1, 2017** —[Vedanta Biosciences](#), an affiliate of [PureTech Health](#) (LSE: PRTC) developing a new category of therapies for immune and infectious diseases based on rationally designed consortia of human microbiome-derived bacteria, today announced that it has exclusively sub-licensed key intellectual property from JSR Corporation to develop and commercialize microbiome-derived cancer immunotherapies based on live biotherapeutics. These live biotherapeutics have been shown to activate CD8+ T cells, a type of white blood cell that is the predominant effector in cancer immunotherapy. The sub-licensed intellectual property is based on the pioneering research of Dr Kenya Honda, Professor, of Keio University School of Medicine and his collaborators in the University of Tokyo in Japan. An IND filing for the lead product candidate is planned in 2018.

"Dr Honda's research suggests an entirely new approach to cancer immunotherapy harnessing the human microbiome, which has the potential to significantly enhance the effectiveness of cancer therapies," said Bernat Olle, PhD, Chief Executive Officer of Vedanta Biosciences. "We are actively developing product candidates containing defined bacterial consortia that activate CD8+ T cells and stimulate the immune system to fight cancer alone and in combination with checkpoint inhibitors. This license to additional intellectual property from Dr Honda's institution further strengthens Vedanta's leading IP position in the microbiome field."

In validated pre-clinical models of cancer, Vedanta's orally administered product candidates containing defined bacterial consortia induced CD8+ T cells, potentiating the immune system's attack of tumour cells. The tumour fighting effects of a variety of checkpoint inhibitors were significantly amplified when combined with the bacterial consortia, suggesting a potentially novel approach for combination cancer immunotherapy.

### **About Key Intellectual Properties**

Keio University and The University of Tokyo joined the Leading Advanced Projects for Medical Innovation ("LEAP"), part of Advanced Research and Development Programs for Medical Innovation at The Japan Agency for Medical Research and Development ("AMED"), in 2016. Their research and development are focused on the development of therapeutic cocktails of bacteria isolated from the gut microbiota. The licensed intellectual properties were developed as a part of the AMED-LEAP Research Program and are exclusively licensed to JSR Corporation (TSE: JSR) from Keio University and The University of Tokyo.

### **About Vedanta Biosciences**

[Vedanta Biosciences](#) is pioneering development of a novel class of therapies for immune and infectious diseases based on rationally designed consortia of bacteria derived from the human microbiome, with clinical trials expected to begin in the second half of 2017. An affiliate of [PureTech Health](#) (PureTech Health plc, PRTC.L), Vedanta's founding team includes a group of world-renowned experts in immunology and microbiology. Vedanta Biosciences is a leader in the microbiome field with capabilities and deep expertise to discover, develop and manufacture drugs based on live bacterial consortia. Leveraging its proprietary technology platform and the expertise of its team of scientific co-founders, Vedanta Biosciences has isolated and maintains the largest collection of human microbiome-associated bacterial strains and has characterized, in collaborations with leading experts, how the immune system recognizes and responds to these microbes. This pioneering work has led to the identification of human commensal bacteria that induce a range of immune responses – including induction of regulatory T cells, CD8+ T cells, and Th17 cells, among others – as well as the characterization of novel molecular mechanisms of microbial-host communication. These advances have been published in leading peer-reviewed

journals including [Science](#), [Nature \(multiple\)](#), [Cell](#) and [Nature Immunology](#). Vedanta Biosciences has harnessed these biological insights, its proprietary library of microbiome-derived bacterial strains, as well as data from clinical translational collaborations, to generate a pipeline of programs addressing infectious diseases, autoimmune diseases, inflammation and immune-oncology indications.

Vedanta Biosciences' scientific co-founders have pioneered the fields of innate immunity, Th17 and regulatory T cell biology, and include Dr Ruslan Medzhitov (Professor of Immunobiology at Yale), Dr Alexander Rudensky (tri-institutional Professor at the Memorial Sloan-Kettering Institute, the Rockefeller University and Cornell University), Dr Dan Littman (Professor of Molecular Immunology at NYU), Dr Brett Finlay (Professor at the University of British Columbia) and Dr Kenya Honda (Professor, Keio University School of Medicine). Vedanta is backed by Seventure, Invesco Asset Management, and Rock Springs Capital and has collaborations with leading institutions including Janssen Biotech, Inc., NYU Langone Medical Center, Stanford University School of Medicine, Leiden University Medical Center, University of Tokyo, Keio University, and RIKEN.

#### **About PureTech Health**

PureTech Health (PureTech Health plc, PRTC.L) is an advanced, clinical-stage biopharmaceutical company developing novel medicines targeting serious diseases that result from dysfunctions in the nervous, immune, and gastrointestinal systems (brain-immune-gut or the "BIG" axis), which together represent the adaptive human systems. PureTech Health is at the forefront of understanding and addressing the biological processes and crosstalk associated with the BIG axis. By harnessing this emerging field of human biology, the Company is pioneering new categories of medicine with the potential to have great impact on people with serious diseases. PureTech Health is advancing a rich pipeline of innovative therapies that includes two pivotal stage programmes, multiple human proof-of-concept studies and a number of early clinical and pre-clinical programmes. PureTech's rich research and development pipeline has been advanced in collaboration with some of the world's leading scientific experts, who along with PureTech's team of biopharma pioneers, entrepreneurs and seasoned Board, identify, invent, and clinically de-risk new medicines. With this experienced team pursuing cutting edge science, PureTech Health is building the biopharma company of the future focused on improving and extending the lives of people with serious disease. For more information, visit [www.puretechhealth.com](http://www.puretechhealth.com) or connect with us on Twitter [@puretechh](https://twitter.com/puretechh).

#### **Forward Looking Statement**

This press release contains statements that are or may be forward-looking statements, including statements that relate to the company's future prospects, developments and strategies. The forward-looking statements are based on current expectations and are subject to known and unknown risks and uncertainties that could cause actual results, performance and achievements to differ materially from current expectations, including, but not limited to, those risks and uncertainties described in the risk factors included in the regulatory filings for PureTech Health plc. These forward-looking statements are based on assumptions regarding the present and future business strategies of the company and the environment in which it will operate in the future. Each forward-looking statement speaks only as at the date of this press release. Except as required by law and regulatory requirements, neither the company nor any other party intends to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise.