

Patent for molecule that helps fight cancer

A key activation molecule which enables the body's own immune system to fight cancer, developed by the University of Southampton, has been issued a US patent.

CD27 is found on T cells and can be manipulated by certain antibodies to fight cancer. It is this process that has been issued the patent entitled: *Human immune therapies using a CD27 agonist alone or in combination with other immune modulators* by the United States Patent and Trademark Office (USPTO) today (10th July 2013).

The University of Southampton has a proven record stretching back to the 1980s of taking ideas from cancer immunology research and delivering them into patient treatments, including anti-cancer antibodies and vaccines, and is probably unique in the UK for such activity. Cancer Research UK scientists, Professors Aymen Al-Shamkhani and Martin Glennie, both from the University of Southampton, are working with Celldex Therapeutics to develop a human monoclonal antibody (mAb) called CDX-1127 that activates CD27. This drug is currently in Phase 1 clinical testing for the treatment of a range of advanced solid and blood cancers.

Over the last decade, researchers around the world have realised that the body's immune system has the capacity to reject cancer. However, this often fails because the cancer cells are seen by the immune system as part of the body and the growing cancer has the capacity to switch off the immune recognition in T cells.

Antibodies, like CDX-1127, are engineered to wake up these T cells and thereby restore the anti-cancer activity to attack the tumour. This process is already proving beneficial with other immune stimulating antibodies in phase III trials for range of cancers.

Professor Martin Glennie, Head of Cancer Sciences, says: "With the developments we are seeing from CDX-1127, and other antibodies, we will soon be able to direct the body's natural defenses more effectively and hopefully trigger response to a level where they can control cancer for the long-term."

The patent is assigned to the University of Southampton which issued an exclusive license to Celldex Therapeutics for the development of human anti-CD27 antibodies in November 2008. The patent includes 18 claims covering various methods of treating cancer using CD27 agonists and relates, among other things, directly to Celldex's CD27 antibody program and therapeutic uses of Celldex's antibody CDX-1127.

"We continue to make excellent progress advancing CDX-1127. Securing this key piece of intellectual property is an important achievement as we expand our clinical program in solid tumors and complete dose-escalation studies in hematologic malignancies," said Tibor Keler, Senior Vice President and Chief Scientific Officer of Celldex Therapeutics. "This patent also directly speaks to the importance of the innovative work of Professor Glennie and his team at the University of Southampton

in targeting members of the TNF receptor superfamily—which we believe is resulting in rapid translation of exciting immunostimulatory antibodies into the clinic.”

Ends

Notes to Editors

1. The US Patent Number is 8,481,029
2. The University of Southampton is a leading UK teaching and research institution with a global reputation for leading-edge research and scholarship across a wide range of subjects in engineering, science, social sciences, health and humanities.

With over 23,000 students, around 5000 staff, and an annual turnover well in excess of £435 million, the University of Southampton is acknowledged as one of the country's top institutions for engineering, computer science and medicine. We combine academic excellence with an innovative and entrepreneurial approach to research, supporting a culture that engages and challenges students and staff in their pursuit of learning.

The University is also home to a number of world-leading research centres including the Institute of Sound and Vibration Research, the Optoelectronics Research Centre, the Web Science Trust and Doctoral training Centre, the Centre for the Developmental Origins of Health and Disease, the Southampton Statistical Sciences Research Institute and is a partner of the National Oceanography Centre at the Southampton waterfront campus.

For further information contact:

Becky Attwood , Media Relations, University of Southampton, Tel: 023 8059 5457, 07545 422512, email: r.attwood@soton.ac.uk

www.soton.ac.uk/mediacentre/

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