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Immunocore and Cardiff University refine smart weapons for cancer

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A partnership between a world-leading research group at Cardiff University and an Oxford-based biotechnology company will refine new drugs to treat cancer, HIV and autoimmune disease.

A team led by Professor Andy Sewell of the School of Medicine will share its pioneering research into T-cells with Immunocore Limited as part of a Knowledge Transfer Partnership (KTP) aimed at advancing drug design and testing.

The T-cells of the human immune system are able to see inside other cells to identify when they become cancerous or infected with bacteria or viruses. A molecule on the T-cell surface called the T-cell receptor detects these anomalies and enables T-cells to destroy abnormal cells.

Technology developed by Immunocore has refined T-cell receptors so that they can be used as drugs that seek out and destroy abnormal or infected cells. Novel technology from the Cardiff group will be used to enhance targeting of these 'smart weapons'.

The partnership will also enable Immunocore to continuously monitor what their drugs bind to during product development, reducing project failures and cycle times by using additional pioneering technology developed at Cardiff.

Professor Andy Sewell said: "*I am thrilled to get this partnership with Immunocore. Their technologies are truly revolutionary as they enable the precise targeting of cells for immune destruction. Immunocore technology allows any cell within the body to be 'marked' for immune destruction with exquisite sensitivity and specificity. I am very excited about the future prospects for this approach and we are delighted to have this opportunity to work with Immunocore to improve the 'homing' of their drugs. It is hoped that this KTP will result in new treatments for cancer and stubborn infections such as HIV and tuberculosis*."

Commenting on their involvement in the partnership, Dr Bent Jakobsen, Chief Scientific Officer of Immunocore Limited said: "*Immunocore is looking forward to starting this collaborative project with Cardiff University. This is an excellent example of cutting-edge research yielding an important commercial advantage in the real world*."

Professor Ken Woodhouse, Pro Vice-Chancellor for Engagement said: "*Cardiff University academics undertake world-leading research and have expertise that can benefit businesses in Wales and beyond. This Knowledge Transfer Partnership between the School of Medicine and Immunocore is a great example of how pioneering University research can help accelerate innovative product development and advance treatment for these major diseases*."

Knowledge Transfer Partnerships is a UK-wide programme part-funded by the government to help businesses and organisations improve their competitiveness, productivity or both through the use of the knowledge, technology and skills that reside within academic institutions such as Cardiff University.

Dr Claire Harvey, Business Development Officer at the University's Research and Commercial Division supports Knowledge Transfer Partnership proposals: "*The Knowledge Transfer Partnership scheme has been running for 35 years which is a demonstration of its success at helping industry and other organisations. This is the first KTP within the School of Medicine and I hope more will follow – there is a great amount of potential both within the School and across the University for KTP projects*," said Dr Harvey.

"*Cardiff University has an extremely high success rate at gaining KTP grants due to the extensive level of support provided throughout the proposal process. KTPs enable academics in all disciplines to put their knowledge and expertise into practice*."

The KTP between the School of Medicine and Immunocore will fund an associate who will undertake this work and obtain a diploma in management. The team expect to be recruiting to this post during December.

The project will last for three years and has been 75 percent funded by Biotechnology and Biological Sciences Research Council and 25 percent by The Technology Strategy Board.