Technology Strategy Board
Driving Innovation

Results of competition: Biomedical Catalyst late stage round 3

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Adaptimmune Ltd (Lead)	Clinical development of an adoptive T cell therapy for triple negative breast cancer	£3,605,171	£2,154,221

Public description

Adaptimmune has developed the adoptive transfer of T cells genetically engineered to express optimised affinity T cell Receptors (TCR) that target cancer peptide antigens. This approach generates potent anti-tumour immunity. This disruptive therapy has the potential to treat late stage diseases, such as triple negative breast cancer, for which there is a great unmet need and is not amenable to targeted biological therapies. Such targeted T cell therapies represent a significant advance over traditional chemotherapy because they selectively attack the cancer and not the rest of the body offering significant increase in the patient standard of life.

This project is for the development of a new TCR gene modified T cell therapy suitable for use in triple negative breast cancer and will evaluate safety and efficacy to assess the potential of this therapy in a disease with a great unmet need.

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Manus Neurodynamica Limited (Lead) Northumbria NHS Foundation Trust	Developing a novel non-invasive aid for early diagnosis of Parkinson's Disease	£229,593	£177,605

Public description

This project will develop and make market-ready an innovative user-friendly, low cost tool, the Manus system, to aid in the differential diagnosis of Parkinson's disease (PD), based around a sensor-pen that uses drawing and handwriting motion analysis to provide objective information to clinicians. The device may be used by non-specialists with minimal training to enable decentralised healthcare and screening to improve the capacity of effective and early diagnosis and intervention by neurology clinics.

Improvements will be made to the existing prototype hardware and mathematical algorithms with diagnostic capability by Manus. This will take place in conjunction with Prof. Walker and colleagues at North Tyneside General Hospital, who will perform a clinical assessment of the utility of the platform and comparison with standards (DaTSCAN and diagnosing by neurologist). Prior to commencing the trial, ethical approval and MHRA approval for use in trial will be obtained.

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MicroPharm Limited (Lead) Public Health England (Health Protection Agency) University of Leeds	Use of ovine polyclonal antibodies to treat severe Clostridium difficile infections	£2,599,535	£2,067,535
Public description			
One of the commonest causes of hospital acquired infection is the bacterium Clostridium difficile which causes diarrhoea and other effects by releasing two powerful toxins. Such infections far outnumber those due to MRSA and the Centre for Disease Control and Prevention in the USA has noted "...the incidence of deaths from C. difficile is greater than the extent of deaths from all the other intestinal diseases combined." The present project involves a novel means of treating patients with severe C. difficile infections by injecting specific antibodies which bind to, and neutralise the toxins. The antibodies are produced by immunising sheep with miniscule amounts of inactivated toxins (similar to the vaccination of infants) and the antibodies are separated from other blood constituents, purified and filled into ampoules ready for intravenous administration as an adjunct to antibiotic therapy.			

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Orthox Limited (Lead)	Late stage development and clinical evaluation of FibroFix cartilage: a mechanically functional, tissue regenerative, knee cartilage repair implant	£3,421,339	£1,733,179

Public description

This project will develop an implant to reduce pain and restore mobility to patients suffering from injuries to the cartilage in their knees. The implant is made from a novel material called FibroFix™ which is formed from a protein extracted from silk fibres called fibroin. The properties of fibroin give FibroFix devices unique advantages, allowing them to be very strong, smooth and resilient like cartilage itself, while also capable of regenerating new cartilage tissue. This will allow the FibroFix implant to be used to treat large injuries to the articular cartilage in the knee where the painful condition osteoarthritis may already be present.

The project will finalise development of this implant and complete testing in animal and laboratory trials, demonstrating that it is both safe and effective. Once this has been achieved, the project will investigate the implant's performance in a clinical trial.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Summit PLC (Lead)	Advancing utrophin modulator SMTC1100 into clinical proof of concept trials for DMD	£8,254,278	£2,400,000
Public description			
Duchenne Muscular Dystrophy ('DMD') is a fatal genetic disease that affects approximately 1,500 boys and young men in the UK. There is currently no disease modifying treatment for this progressive muscle wasting disease. Summit, a UK drug discovery and development company, is developing SMTC1100, a utrophin modulator drug that has the potential to treat all genetic forms of this disease. It has demonstrated significant potential in disease models of DMD and completed a Phase 1 clinical trial in healthy volunteers in 2012. The support of the Technology Strategy Board will allow this promising therapy to progress into patient clinical trials that aim to establish clinical proof of concept for SMTC1100 and validate it as a viable therapy for this devastating disease.			