UK and Japan award eight Regenerative Medicine projects

The Medical Research Council (MRC) and the Japan Agency for Medical Research and Development (AMED) have joined forces to support eight new Regenerative Medicine research partnerships.

In this landmark collaboration, MRC and AMED will make a total of almost £7 million available to support collaborative projects that seek to advance regenerative approaches towards clinical use.

The funded projects will focus on research to underpin the early-stage development of novel regenerative medicine-based therapies for a range of disorders, including, Parkinson's disease, blood disorders and liver diseases, or to utilise stem cells as important medical research tools to study human development.

Professor Fiona Watt, Executive Chair at the Medical Research Council and Dr. Yoshinao Mishima, President at the Japan Agency for Medical Research and Development jointly said:

> *"We are delighted to announce these new awards in collaboration with our partners. The UK and Japan are world leaders in stem cell and regenerative medicine research. Past pioneering work in our countries has had a transformative impact and has revolutionised the potential for innovative approaches to medicine. It is timely to bring our world leading groups together in their efforts to tackle the same therapeutic goals. Regenerative Medicine is a strategic priority for the MRC and AMED, and these excellent international partnerships will complement our existing investments in Regenerative Medicine and Stem Cell research and add real value to the field."*

Regenerative medicine is an interdisciplinary research field that seeks to develop the science and tools to help repair or replace damaged or diseased human tissue to restore normal function. As a form of 'advanced therapy' regenerative medicine has the potential to address a number of currently incurable degenerative conditions and is poised to revolutionise medical treatment in the 21st century.

All regenerative medicine strategies depend upon harnessing, stimulating or guiding our naturally occurring developmental or repair processes, and could involve transplantation of cells, stimulation of the body's own repair processes, or the use of cells as delivery vehicles for therapeutic agents.

This exciting new area of joint research also marks an important milestone in UK-Japanese bilateral relations, with the initiative playing a key role in strengthening cooperation between leading UK and Japanese researchers in the field.

MRC

MRC, part of UK Research and Innovation (UKRI), is funding these projects via UKRI's Fund for International Collaboration (FIC). FIC aims to enhance the UK's excellence in research and innovation through global engagement. It focuses on bilateral and multilateral partnerships with global research and development (R&D) leaders and is administered by UKRI.

AMED

AMED supports the Japanese components of the collaborative projects through “The Program for Technological Innovation of Regenerative Medicine”. This program implements objective-achievement-type basic research, based on original ideas that advance the development of the field of stem cells and regenerative medicine. The main purpose of this program is to develop seeds of next-generation innovative medicine; therefore, emphasis is on research that will be of high international competitiveness, research based on innovative and creative ideas, and research that contributes to technological innovation.

The following studies have been awarded through this initiative:

Alfonso Martinez Arias	University of Cambridge	**Cantas Alev**	Kyoto University	3D Human Axial Development In Vitro: using novel human in vitro somitogenesis models to study birth defects with patient-relevant iPS cell lines
Jonathan Dawson	University of Southampton	**Yasuhiko Tabata**	Kyoto University	Elucidating and modulating macrophage and stem cell responses to bioactive nanoclays for bone regeneration
Cedric Ghevaert	University of Cambridge	**Koji Eto**	Kyoto University	Generating platelets in vitro for the clinic: optimisation and added clinical efficacy
Keisuke Kaji	University of Edinburgh	**Kosuke Yusa**	Kyoto University	Reprogramming adult human hepatocytes into liver progenitors with unlimited self-renewal, efficient differentiation, and transplantation capacities
David Kent	University of York	**Satoshi Yamazaki**	The University of Tokyo	Human blood stem cell expansion: Empowering new technology for stem cell medicine
Tilo Kunath	University of Edinburgh	**Asuka Morizane**	Kyoto University	Non-invasive monitoring of human pluripotent stem cell differentiation into midbrain dopaminergic neural cells
Simon Mendez-Ferrer	University of Cambridge	**Hitoshi Takizawa**	Kumamoto University	Improving haematopoietic reconstitution in blood stem cell transplantation procedures through the regulation of stem cells and their niches
Benjamin Simons	University of Cambridge	**Shosei Yoshida**	National Institute for Basic Biology	Harnessing spermatogonial stem cell flexibility to increase transplantation efficiency