The Chinese University of Hong Kong
Department of Biomedical Engineering

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Decellularized Tissue Engineering Hyaline Cartilage Graft for Articular Cartilage Repair and Its Forward-Looking Test for Space Medicine

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Abstract

Articular hyaline cartilage, a tissue articulating skeleton at joints, is highly prone to damages caused by trauma, diseases and ageing; once injured, its self-regeneration is difficult and slow due to the avascular nature. To repair and regenerate damaged articular cartilage, we have innovatively developed a continuous methodology to directly set up a macro-scaled 3D decellularized tissue engineering hyaline cartilage graft (dLhCG). Good osteochondral defect healing and complete integration with adjacent native cartilage in in-situ implantation of dLhCG samples in large animal models demonstrated the competence of dLhCG as a cartilage graft. Investigative clinical trials have been initiated in China and the initial curative effect appears positive. Based on this, for the coming of the Space Age, a forward-looking space experiment is designed and performed with dLhCG for future space medicine. For this purpose, dLhCG samples have been delivered onto Chinese Space Station via Tianzhou-6 cargo spacecraft for a six-month space experiment.

Biography

Dr. Dong-An Wang is a Professor of Department of Biomedical Engineering in City University of Hong Kong. Dr. Wang has authored nearly 200 research and scholarly publications and numerous patents. The publications include those published in Nat Mater, Adv Mater, etc., some of which are editorially quoted by Science, Nat Mater, etc. Dr. Wang has been conferred with Best Paper Award by Elsevier and Euro Federation for Pharm Sci, and Biomaterials Science Prize by Royal Society of Chemistry. Dr. Wang is a Fellow of Royal Society of Chemistry. Dr. Wang is ranked as the Top 2% of the World's Most Highly Cited Scientists by Stanford University. Dr. Wang is conferred with an honorary sideline appointment as the Head of Research at Karolinska Institutet Ming Wai Lau Centre for Reparative Medicine. Dr. Wang is a member of Biology & Medicine Panel, Research Grants Council (RGC), Hong Kong. Dr. Wang used to be Assoc Chair of School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore and Acting Head of Department of Biomedical Engineering, City University of Hong Kong.

***** ALL ARE WELCOME *****

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