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UNIVERSITÀ CAMPUS BIO-MEDICO DI ROMA
UOR ORTOPEDIA E TRAUMATOLOGIA

Background

Low back pain (LBP) is the leading cause of disability worldwide, and imposes an economic burden of nearly ~€240 billion every year in the EU. Pain relief medication and physiotherapy are the first treatment options and, when they fail, the last remaining option is invasive and costly surgery. There are no treatments that can stop or reverse LBP. The iPSpine project aims to investigate and develop a new therapy for LBP using induced pluripotent stem cells (iPSCs) technology and smart biomaterials that will be translated from laboratory models into a clinically relevant animal model.

Marianna Tryfonidou

The project coordinator Marianna Tryfonidou, Professor of Regenerative Orthopaedics at the Faculty of Veterinary Medicine at University of Utrecht, will introduce the iPSpine Project, its aims and progresses.

Gianluca Vadalá

Professor Gianluca Vadalà, Orthopaedic and Trauma Surgeon and coordinator of the Laboratory of Regenerative Orthopaedics, Reasearch Unit of Orthopaedics and Traumatology at Campus Bio-Medico University, will describe the disc degeneration model used during the preclinical study conducted in sheep.

Veronica Tilotta

Veronica Tilotta, PhD student in the Laboratory of Regenerative Orthopaedics, Research unit of Orthopaedics and Traumatology at Campus Bio-Medico University, will present the *in vitro* and *in vivo* results on viability of the iPS-NLC-progenitors developed during the project.

Hans-Joachim Wilke

Professor Hans-Joachim Wilke, Institute of Orthopaedic Research, University of Ulm, will present the newly designed portable spine biomechanics tester and the dynamic loading bioreactor for the human disc tissue.

European Commission

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