ABSTRACT

Cartilage tissue are considered to lack healing capacity. Osteoarthritis (OA) disease and cartilage injuries induce pain and joint dysfunction and cause a severe burden to society and health care systems worldwide. Methods for regenerating cartilage tissue are expected to improve therapies for the disease and injuries. Treatment of cartilage injuries by the Autologous chondrocyte transplantation technique (ACT) that was developed by surgeons in Gothenburg in Sweden has emerge over the past decade as the first disease modifying treatment for OA with excellent long term clinical results. Still the method is expensive and is only efficient on small defects. Our aim is to generate hyaline cartilage tissue by 3D-bio-printing iPS cells that has been rejuvenated from chondrocytes from the knee from patient.

BIOGRAPHY

Dr. Stina Simonsson
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Education:
2000–2005 Post-doctoral fellow at the Gurdon Institute, Cambridge University, UK. Area: Molecular and developmental biology Sub Areas: Nuclear Reprogramming in Xenopus Laevis, Laboratory of Professor Sir John Gurdon, Wellcome Trust/Cancer Research UK; Doctor of Philosophy in medical biochemistry 2000 at Department of Medical Biochemistry, Faculty of medicine, University of Göteborg, Sweden. Doctoral Thesis “Initiation of Herpes Simplex Virus DNA Replication”. Supervisor Professor Per Elias; Master of Science in Chemical Engineering 1992, Chalmers University of Technology, Diploma work in Physical Chemistry: Identification and characterization of genomic nucleosome-positioning sequences; Engineering and Natural Science, Aschebergsgymnasiet, Göteborg, Sweden 1988.

Past experience:
Assistant Professor, PI at Department of Biomedicine, Gothenburg University, Sweden. Assistant professorship granted by the Swedish medical research council 2005–2010. Main supervisor for PhD students Helena Johansson, pharmacist and Dzeneta Vizlin, geneticist that graduated the 1st of October and 10th of December respectively in 2010. Title of thesis: Identification of stem cell factors -Novel protein-protein interactions and their functions. Title of thesis: Molecular mechanisms of embryonic stem cell pluripotency: transcription, telomere maintenance and proliferation.

Current work:
Since 2011 I work together with Cecilia Boreström and Lars Enochson in the iPS research team. We are currently working on reprogramming cells from patients into stem cells. These cells are patient-specific and therefore may prove useful in screens for potential drugs, regenerative medicine, increasing knowledge of human development, and in models for specific human diseases.