

Growth factor-functionalized hydrogel for treatment of Pelvic Organ Prolapse

Location: Experimental Urology, RIMLS

Duration: minimal 5 months/ >30 EC, starting from April 2021

We are looking for an enthusiastic and motivated Master student for minimal 5 months/30 EC with interest in molecular/medical biology and tissue engineering. The group of dr. Paul Kouwer of the Institute of Molecules and Materials focuses on the biomedical application of the polyisocyanide (PIC) hydrogels. Besides incorporating cell-binding motifs (RGD), we also want to further improve the biofunctionality of these hydrogels by covalently conjugating growth factors to these polymers in order to improve tissue regeneration in the context of pelvic organ prolapse.

The student will participate in the project focusing on the functionalization of these hydrogels with the following growth factor: Fibroblast Growth Factor 2 (FGF2/bFGF). The practical work consists of 2D and 3D cell culture, validating bioactivity bFGF, qPCR, biochemical assays (proliferation, ECM production) and, under supervision, confocal microscopy and flowcytometry. The student will work in the Experimental Urology lab (RIMLS) under daily supervision of a PhD student. Candidates with previous experience with cell culture is highly preferred.

For application: Please send your CV and motivation letter to Melissa van Velthoven (Melissa.vanVelthoven@ru.nl)

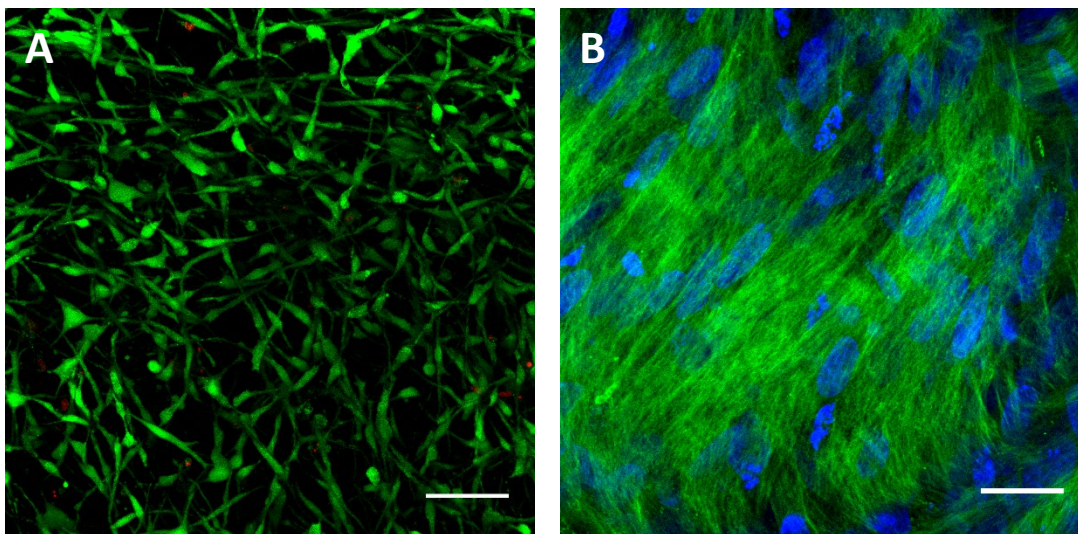


Figure 1 3D cultured adipose derived stem cells in the PIC hydrogel. A) Live/dead imaging at day 7 (Live cells in green and dead cells in red; scalebar = 100 μm). B) Confocal image of collagen (green) and cell nuclei (blue) at day 14 (scalebar = 25 μm).