

## Multi-Dimensional Nanofibrous Scaffolds for Inducing Myoblast Differentiation

차성호, 고원건<sup>†</sup>, 정의석, 김민수, 조강희, 홍혜진

연세대학교

(wongun@yonsei.ac.kr<sup>†</sup>)

In this study, we fabricated 3D fibrous scaffolds to promote myogenic differentiation of myoblast. We used poly (ethylene glycol) (PEG) hydrogel and polycaprolactone (PCL) electrospun nanofiber to create micropatterned structure. The resultant micropatterned 3D fibrous scaffold had random, parallel, vertical orientation of nanofiber and hydrogel. This scaffold offered not only biomimetic structures but also suitable environment for cell differentiation by cell morphology change. The results showed that the aligned fibrous network and hydrogel structure of 3D scaffolds were beneficial to induce myogenesis of myoblast, and efficiency was higher than other systems without alignment of nanofiber or hydrogel. The fabricated multifunctional 3D fibrous scaffold indicates the potential for using practical tissue engineering.