SUPPORTING INFORMATION

Biphasic hydrogels integrating mineralized and anisotropic features for interfacial tissue engineering

Mari Carmen Echave^{1,2}, Rui M. A. Domingues^{3,4,5}, Manuel Gómez-Florit^{3,4}, José Luis Pedraz^{1,2}, Rui L. Reis^{3,4,5}, Gorka Orive^{1,2,6}, Manuela E. Gomes^{3,4,5,*}

¹NanoBioCel Group, Laboratory of Pharmaceutics, School of Pharmacy, University of the Basque Country UPV/EHU, Paseo de la Universidad 7, Vitoria-Gasteiz 01006, Spain.

²Biomedical Research Networking Centre in Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN). Vitoria-Gasteiz 01006, Spain.

³3B's Research Group, I3Bs – Research Institute on Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark, Parque de Ciência e Tecnologia, Zona Industrial da Gandra, 4805-017 Barco, Guimarães, Portugal.

⁴ICVS/3B's–PT Government Associate Laboratory, Braga/Guimarães, Portugal.

⁵The Discoveries Centre for Regenerative and Precision Medicine, Headquarters at University of Minho, Avepark, 4805-017 Barco, Guimarães, Portugal.

⁶University Institute for Regenerative Medicine and Oral Implantology - UIRMI (UPV/EHU-Fundación Eduardo Anitua), Vitoria, Spain.

*Corresponding author: M.E. Gomes (megomes@i3bs.uminho.pt)

SUPPORTING FIGURES



Figure S1. Digital image of produced triphasic hydrogel with well-differentiated phases. The intermediate phase between the anisotropic and mineralized phase was a naked gelatin hydrogel. Blue dye was used to better differentiate the transition between phases.



Figure S2. Polarized optical microscopy images taken after 10 min with or without 400 mT magnetic field exposure. Hydrogels containing 0.5 and 1 % (w/v) cellulose nanocrystals were tested in this assay. Scale bars = $500 \mu m$.



Figure S3. Confocal images of hASCs encapsulated in gelatin hydrogels with 0, 0.5 and 1 % (w/v) cellulose nanocrystals after 3 days of culture and the live/dead staining. Quantitative data from the acquired images are shown. Scale bars = $200 \mu m$.