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Soy protein isolate/bioactive glass composite membranes: processing and properties

S. Tansaz ^{*a}, M. Schulte ^b, U. Kneser ^b, D. Mohn ^{c,d}, W. Stark ^{c,d}, J. A. Roether ^e, I. Cicha ^f, A. R. Boccaccini. ^{*a}

^aInstitute of Biomaterials, University of Erlangen-Nuremberg, Cauerstr.6, 91058 Erlangen, Germany

^b Department of Hand, Plastic and Reconstructive Surgery—Burn Center, BG Trauma Center Ludwigshafen/Rhine, Hand and Plastic Surgery, University Heidelberg, Ludwig-Guttman-Str. 13, Ludwigshafen, Germany

^c Department of Chemistry and Applied Biosciences, Institute for Chemical and Bioengineering, ETH Zurich, Switzerland

^d Clinic of Preventive Dentistry, Periodontology and Cariology, University of Zurich, Centre of Dental Medicine, Plattenstr. 11, CH-8032 Zurich, Switzerland

^e Institute for Polymer Materials, Department of Materials Science and Engineering, University of Erlangen-Nuremberg, Erlangen, Germany

^f Section of Experimental Oncology and Nanomedicine, ENT-Department, University Hospital Erlangen.

* Corresponding authors. Email addresses: aldo.boccaccini@ww.uni-erlangen.de

samira.tansaz@fau.de

Abstract

Composite biomaterials based on proteins and inorganic fillers are highly attractive for wound dressing applications due to their highly absorbent properties towards blood and exudate provided by the inorganic fillers. Moreover, such composites offer a desirable environment for cells due to the combination of organic and inorganic characteristics. This study highlights the fabrication of soy protein isolate/nanoscale bioactive glass composite films by solvent casting method as a matrix for wound-dressing applications. The effect of the addition of bioactive glass nano particles on blood clotting was assessed. Cytotoxicity and *in vitro* cytocompatibility of the films were also tested. The results showed that the composite films could meet the essential requirements for an appropriate wound dressing with additional favorable properties such as hemostatic capability and mechanical properties as well as significant cell cytocompatibility.

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