

# HIGHLIGHT

Jena  
April 25, 2014

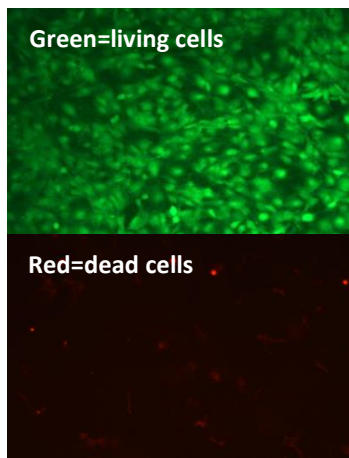


Figure 1: Life/Dead test fluorescence images of one tested hydrogel after 7 days.

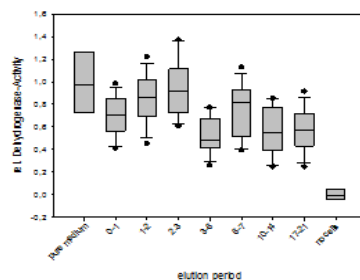


Figure 2: WST-1 relative dehydrogenase activity for one non-biodegradable vascular build-up material (in tube form).

## Biocompatibility of selected materials

**A first set of suitable biocompatible materials used in biofunctionalisation was made available for the project. Cytotoxicity was assessed using Life/Dead and WST-1 assays. Both appropriate material properties and biocompatibility make these materials promising candidates for further investigations in matrix-tissue interactions and the build-up of the ArtiVasc 3D vascularized composite tissue graft.**

In total, 18 different materials from three main material categories (vascular build-up, electrospinning, hydrogel) were tested. In addition, 5 different photoinitiators were investigated..

Control (glass)

INN-ES-002

INN-ES-004

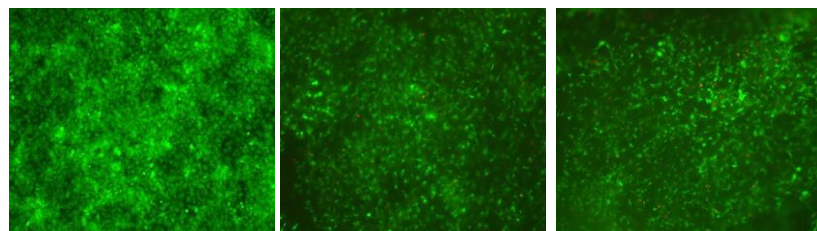


Figure 3: Life/Dead test fluorescence images (overlays) of non-biodegradable electrospinning materials, compared to control (glass) after day 4.

Out of the 18 tested compounds, 13 show promising results regarding their biocompatibility. At least one material from each category has passed the cytotoxicity tests. Fibroblast grown on hydrogels or electrospun materials show a confluent cell layer of living cells after 4 and 7 days in culture (Fig.1 and 3). The WST-1 test performed for the vascular build up material shows no negative effect on the dehydrogenase activity. The material is therefore classified as non-toxic (Fig2).

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