

BIOCOMPATIBILITY ASSESSMENT OF POLYCAPROLACTONE SCAFFOLDS FOR TARGETED ALKALINE PHOSPHATASE DELIVERY

A. N. Ivanov^{a, *}, Yu. A. Chibrikova^a, M. S. Savel'yeva^a, A. S. Rogozhina^a, and I. A. Norkin^a

^a*Research Institute of Traumatology, Orthopedics and Neurosurgery of the Saratov State Medical University named after V.I. Razumovsky, Saratov, 410002 Russia*

**e-mail: lex558452@gmail.com*

Alkaline phosphatase gene expression takes place in the earliest osteogenesis stages enabling targeted delivery of this enzyme with scaffolds for stimulation of reparative processes in the bone tissue. The purpose of this research was the biocompatibility assessment for polycaprolactone vaterite-mineralized scaffolds that provided targeted delivery of alkaline phosphatase in subcutaneous implantation tests in white rats. It was found that polycaprolactone and vaterite scaffolds that contained alkaline phosphatase caused no evident inflammatory response, got actively vascularized, and populated with the connective tissue elements suggesting good prospects for their clinical testing as stimulators of bone tissue regeneration.

Keywords: regeneration, scaffolds, vaterite, alkaline phosphatase