

Abstract

The theoretical part of the work is focused on the intelligent biomaterials, their composition, structure, mechanism of the answers on impulses, also on their possible and real use, mainly in tissue engineering. There is a text passage including recent knowledge about biodegradation of polymers focusing on polylactic acid. The main part of the work is the experiment. The time-course of swelling of the matrices made from linear copolymer of DL-lactic acid and glycolic acid and branched terpolymer of DL-lactic acid, glycolic acid and tripentaerythritol in the aqueous medium was studied. The matrices were of different weights – 50 mg and 100 mg. Their swelling was monitored by destructive and non-destructive manner at 7 °C and 22 °C during an eight-day period. The volume oscillation of matrices was revealed and documented. The time-course of this phenomenon is influenced by temperature, matrixe's size, and the specific features of molecular structure.