THE ANTIBIOTIC INDUCTION OF APOPTOTIC - LIKE CHANGES IN BACTERIA *E. COLI* - GFP ENCAPSULATED IN HOLLOW FIBERS

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Abstract

Encapsulation of bacteria in a semipermeable polymer membrane gives a lot of technological possibilities. Our aim was to evaluate the performance of bacteria encapsulated in hollow fibers when treated with chosen antibiotic. The antibiotic application may cause release of biologically active substances for which production the bacteria may be genetically modified. The encapsulated in HF bacteria *Escherichia coli* transfected with pQE-GFP (green fluorescent protein) plasmid were incubated with addition of gentamycin or tetracycline. The encapsulated in hollow fibers *E. coli* culture with addition of tetracycline proves the tetracycline impact on the bacteria viability increasing the necrotic bacteria share. Polypropylene modified membranes allow to avoid permeation of the bacteria through the membrane wall. *E. coli* encapsulated in HF may be used in future, in systems releasing the therapeutic factor.

K e y w o r d s: hollow fiber, encapsulation, bacteria *Escherichia coli,* antibiotic