

## 2 Abstract

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Title of Thesis: Liberation of folic acid from microfibers based on hyaluronic acid

In this experimental thesis, microfibers made of native hyaluronan were used. Those fibers were coated with folic acid using dip-coating technology. Graduated concentrations of folic acid were added to the coating suspensions based on the hydrophobic hyaluronic acid. The rheological properties of coating mixtures and their adhesion to the fiber surface was examined, to enable a preparation of fibers with the highest possible surface layer homogeneity. Liberation of folic acid (1-3%) from microfibers to the solution of simulated blood plasma was examined within 7 days in time intervals from 0.5 to 168 hours at 37°C. Despite using hydrophobized derivative of hyaluronic acid, liberation of the active ingredient was fast with 40 – 80% of the total amount was released from the surface of the fibers within the first 30 minutes. Each type of coated fiber released at least 90% of the active ingredient within the first 24 hours regardless the folic acid concentration.