

## SUMMARY

Theoretic part deals with theories of bioadhesion, characteristics of bio- and mucoadhesives. Routs of application are analysed in more detail. Theoretic part is concluded with testing of bioadhesion.

Experimental part of thesis investigates rheological and adhesive properties of plasticized oligoesters of D,L - lactic acid and glycolic acid in ratio 1:1 branched with pentaerythritol or tripentaerythritol. Adhesivity was measured on the Material testing machine T1-FR050TH.A1K Zwick/Roell as maximal force  $F_{max}$  required to detach the polymer system from substrate. These values were converted to the size of the contact area. Viscosity of samples was measured using viscosimeter Brookfield DV-E with an adaptor for small sample amount by 37°C and 50°C temperature.

From the outcomes of made experiments follow that carriers with higher molar mass possess higher dynamic viscosity, the lowest dynamic viscosity was found at carrier with the lowest molar mass.

The lowest adhesive force was found at carrier 1P with relative low degree of branching  $g' = 0,59$  and middle molar mass  $M_w = 8400$  g/mol. Adhesivity of other carriers was significantly higher, in range from 49.26 mN/mm<sup>2</sup> to 65.97 mN/mm<sup>2</sup>. Acyclovir release from branched carriers differs particularly at initial phase. Carrier 3P with the digest molar mass possesses lag-time, dissolution from 5P runs evenly right from the start, carriers 1P and 3T show burst effect.