

## SUMMARY

The aim of this diploma thesis was to find information about collagenous binders that are used in artworks and to divide them into the groups due to their applicability. The second aim was to find their proteinaceous composition and search the individual proteins in the publicly available database. Consequently the proteins were cleaved "*in silico*" using a special software and the molecular masses of their tryptic peptides were determined. The next aim was to analyse reference collagenous binders by the method of peptide mass mapping and, finally, compare the experimentally obtained peptides with those obtained by special software.

Proteins contained in collagenous materials (different types of collagens and elastin) were found in ExPasy database. The sequences of these proteins were cleaved in mMass program, where the peptides with the known aminoacid sequences and molecular weight ( $m/z$ ) were obtained. The experimentally found values of  $m/z$  were gained by analyses of different types of animal glues (hide, bone and rabbit glue, gelatine and fish glue). The analyses include enzymatic cleavage of the collagenous materials by trypsin, purification of the obtained peptides on reverse phase Zip Tip and measuring of their  $m/z$  values using MALDI-TOF mass spectrometry.

By comparing of experimentally and "*in silico*" obtained  $m/z$  values the individual proteins in the different types of collagenous binders were determined.