Abstract

The oviduct plays an important role in the complex process of fertilization and in the early phase of embryo development. Isolation and characterization of some components of bovine oviduct participating in the formation of oviductal sperm reservoir was a subject of the present study. Two affinity sorbents containing immobilized components of bull seminal plasma (non-separated proteins of bull seminal plasma and their phosphorylcholine binding fraction) were prepared and used for the study of interaction of immobilized ligands with components of oviductal epithelium.

Two types of preparation of oviductal membrane proteins of the isthmus region were isolated: complete membrane proteins and the apical fraction of membrane proteins. These preparations were separated using prepared affinity matrices. in both cases only an insignificant amount of proteins was found in the adsorbed fractions.

Further attention has been paid to the identification of four protein zones detected after electrophoretic separation in the presence of SDS (rel. mol. wt. 15 500 – 18 500) in the fraction of apical membrane proteins. These proteins were identified after the electrophoretic separation and tryptic digestion using MS analysis as bovine histones H4, H2A typ 2-C, H2B typ 1-K a H3.3. Proteins identified as bovine histones interacted after polyacrylamide gel electrophoresis and transfer to nitrocellulose membrane with non-separated proteins of bull seminal plasma and their phosphorylcholine-binding fraction. Besides that, they also interacted with biotinylated lectin from Lotus tetragonolobus seeds specific for L-fucosyl residues. Bovine histones also exhibited antimicrobial activity: they significantly inhibited a growth of prokaryotic pathogens (*M. luteus, E. coli, Ch. trachomatis*), but not of eukaryotic ones. Proteins analogous to oviductal membrane histones were also detected in the bovine oviductal fluid. (In Czech)

keywords: antimicrobial activity, *Bos taurus*, histones, oviductal fluid, oviductal reservoir, sperm