

## **Abstract**

Reproduction is an essential feature of all animals and a fundamental step to produce new generations. Study of sperm proteins is crucial for understanding of the sperm-egg recognition. We searched out sperm surface proteins involving in the zona pellucida (ZP) binding and studied whether these proteins are preserved throughout mammalian species. Indirect immunofluorescent technique was used to test a panel of monoclonal antibodies prepared against boar sperm surface proteins on spermatozoa of bull and mice. We found a cross-reactivity of some antibodies against boar sperm with bull ejaculated and mouse epididymal spermatozoa. Further, we isolated sperm proteins from different mammalian species, such as pig, bull, dog, cat, mouse and human. Proteins were separated by SDS-electrophoresis and protein/glycoprotein profiles from epididymal, ejaculated and *in vitro* capacitated sperm were compared. The interaction of sperm with ZP was studied on electrophoretically-separated sperm surface proteins from pig and bull with biotin-labeled ZP glycoproteins. Antibodies, which reacted with boar sperm surface proteins with ZP-binding activity, therefore could be potential egg-binding receptors, were used for monitoring of the sperm protein origin in reproductive fluids and tissues.

(In Czech)

**Keywords:** sperm proteins, SDS-electrophoresis, immunofluorescence, zona pellucida-binding receptors