

Annexin A2 and S100A10 in the mammalian oviduct epithelium

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In eutherian mammals, sperm-oviduct interaction provides the formation of a sperm storage and allows the selection of sperm with certain qualities. In sows, we proposed that the oviductal Sperm Binding Glycoprotein SBG is involved in sperm selection. As to reservoir formation, in bovine, essential proteins involved have been characterized as sperm adsorbed PDC109 and oviductal cell's Annexin (ANXA) 1, 2, 4 and 5. In porcine, AQN1 is the sperm component and ANXA2 the oviductal component most likely to be clue proteins responsible for sperm reservoir formation. We have previously proposed that ANXA2 may be part of a ubiquitous mechanism of sperm-oviduct interaction. As S100A10 is usually associated to ANXA2, in this work we search for the presence of ANXA2 and S100A10 in the oviducts of several mammals by western blot. We find that ANXA2 and S100A10 co-exist in the oviductal cell extracts from pig, human, cow, cat, dog, mouse and rabbit. Immunohistochemistry of porcine isthmus and ampulla shows that ANXA2 and S100A10 localize to the same type of cells, ciliary isthmus cells surrounding the lumen. Different extraction procedures were performed on porcine oviductal cell membranes, showing ANXA2 liberation in every case, and S100A10 release increasing from Triton X100 to ionic strength to EGTA containing buffer, suggesting Ca^{++} may be involved in its attachment. Immunoprecipitation of epithelial cell extracts with anti-ANXA2 antibodies shows S100A10 co-precipitation.

We conclude that ANXA2-S100A10 complex is present in the mammalian oviduct and that its interaction with sperm proteins may be a part of the sperm-oviductal cell relation in several mammals.