

RODENT SPERM ASSOCIATION: FROM MORPHOLOGICAL DESCRIPTION TO ELUCIDATION OF EPIDIDYMAL PROTEINS IN SPERM ASSOCIATION.

Monclus M. A., Vincenti A. E., Cabrillana M. E. and Fornés M.W.

IHEM, Instituto de Histología y Embriología de Mendoza, Fac. de Ciencias Médicas - U.N. de Cuyo – Universidad del Aconcagua – CONICET.

Mouse and rat sperm associates each other inside the caudal epididymis forming Rosettes. These structures consist in many live sperm joined by their heads. When the epididymal content is released, the sperm acquire motility and detach progressively des assembling the association. Rosettes were detailed characterized by many microscopic techniques. By TEM using Concanavalin-A couple with colloidal gold particles we observed the presence of glucose/mannose residues in the electron dense material that join the sperm heads inside the Rosettes. Based on these morphological findings we designed a chromatographic strategy to isolate proteins related with this phenomenon from total epididymal fluid. Gel filtration and Concanavalin-A affinity permit us to isolate a protein fraction able to re-associate isolated sperm *in vitro*, resembling the phenomenon observed *in vivo*. Among the proteins identified two members of the serine proteases inhibitors family (Serpins): α -1 Antitrypsin and a new member with a structure compatible to the predicted Serpin 1 F were found. The physiologic meaning of this finding remains unclear, but probably the presence of an equilibrium proteolysis / proteolysis inhibition is present inside the epididymal lumen, and is responsible for the assembling/des assembling of these Rosettes *in vivo*.