

Round-headed Spermatozoa: A Model to study the Role of the Acrosome in early events of Gamete Interaction: Rundkopfspermatozoen: Ein Modell zum Studium der Rolle des Akrosoms

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Summary: Gamete interactions in mouse involves at least two steps: the first is the interaction of a spermatozoa receptor located in the plasma membrane and ZP3, a zona pellucida (ZP) glycoprotein. ZP3 also can induce the acrosome reaction, making possible the second step: a closer interaction between ZP2 and an inner acrosomal membrane receptor. Our aim was to study gamete interaction in round-headed spermatozoa to determine at which functional level fertility is impaired. These spermatozoa are predominant in some infertile male and are characterized by the absence of acrosome; they also present an abnormal pattern of chromatin condensation. Human ZP and zona free hamster oocytes were used to study gamete interaction. No binding to ZP was observed either with light or electron microscopy. Our findings suggest that the presence of the acrosome could be necessary for the sorting and right organization of plasma membrane proteins. Round-headed spermatozoa could also present a general alt