FUNCTIONAL ANATOMY OF ACROSIN INHIBITORS 17

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Acrosin inhibitors, separated from seminal plasma or tissue homogenates by affinity chromatography, were purified by ion exchange and ion equilibrium chromatography to obtain homogeneous preparations (boar, guinea pig or man) with respect to the protein and carbohydrate moieties (boar inhibitor). The amino acid and carbohydrate composition, molecular weight and reactive site residues of protein-homogeneous inhibitors and isoinhibitors are estimated. Their inhibitory properties against acrosin and trypsin are discussed in relation to the covalent structure of the boar seminal plasma inhibitor. Covalent structures as revealed by the completed amino acid sequence of the boar inhibitor and the peptide data accumulated for the guinea pig inhibitor will be presented. The polypeptide chain folding, a prerequisite for inhibitory activity, is determined by positioning of all three disulfide bonds in the acrosin interaction will be mentioned. The homology of the seminal and their genetic relationship will be correlated to known covalent structures.

LOCALIZATION OF ACROSOMAL ENZYMES IN HUMAN SPERMATOZOA 17a

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Specific antibodies (Fab fragments) have been successfully used to localize acrosin and hyaluronidase in sheep spermatozoa and similar experiments are in progress on human spermatozoa. Spermatozoa are fixed in formaldehyde and antigen localized using a double antibody technique, with both fluorescent and peroxidase labelling of antibody. Results obtained from light microscopy, together with biochemical extraction data, suggest that hyaluronidase is mainly localized in the acrosomal contents, whereas acrosin is mainly bound to the inner acrosomal membrane and equatorial segment.