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JOURNAL ARTICLE

Application of flow cytometry to studies on the human acrosome

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This study describes the use of flow cytometry combined with specific labelling of the human sperm acrosome using a FITC-labelled plant lectin (Arachis hypogea agglutinin). Localization of the label to the acrosome was encouraged by freezing the sperm for at least 24 hours at -70 degrees C prior to labelling. Studies of sperm from 53 normospermic men revealed that acrosome labelling followed a single normal distribution without the presence of subpopulations. The average fluorescence and degree of variation within the sperm population differed markedly between sperm samples. These differences could not be predicted by any of the normal criteria of sperm quality, including sperm morphology, vitality, and motility. Exposure of washed sperm to the calcium ionophore A 23187 in the presence of calcium at 37 degrees C, caused a time-related leftward shift in the distribution of acrosome fluorescence, indicating that this technique can be also used to monitor the acrosome reaction.