

Journal of Andrology, Vol 11, Issue 4 319-324, Copyright © 1990 by The American Society of Andrology

JOURNAL ARTICLE

Preparation and characterization of monoclonal antibodies against sperm-specific lactate dehydrogenase C4

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LDH-C4, the testis-specific isozymes of lactate dehydrogenase (LDH), is the predominant LDH isozyme in mammalian spermatozoa. Nine monoclonal antibodies against mouse LDH-C4 have been developed. These antibodies were tested for cross reactivity with LDH-C4 from human testis and with LDH-1-5 from mouse and human testes by immunoelectrophoresis, bio-dot, and western blot assays. The results showed that all monoclonal antibodies were specific to LDH-C4 only: they did not react with LDH-1-5 from mice, nor from humans. The immunologic localization of the monoclonal antibodies on capacitated sperm was observed by indirect immunofluorescent assay. On mouse sperm the antibodies were bound to the tail only, but on human sperm eight antibodies were bound to the postacrosome, some to the neck and to the mid-piece. Most of the antibodies belonged to the Ig G class.

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