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JOURNAL ARTICLE

Activation of palmitic acid by human spermatozoa

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Human spermatozoa were studied to determine if a long chain fatty acid, CoASH ligase (AMP) (E.C. 6.2.1.3), was present. Ligase activity was measured with a radioligand millipore filter technique and was readily detectable in spermatozoa or in the protein fraction extracted with Triton X-100, but was not present in seminal plasma. The assay was optimized for pH, protein concentration, and incubation time. Activity was dependent upon palmitic acid, ATP, coenzyme A, and a divalent cation. Sperm ligase appeared similar to the ligase characterized from other tissues by sharing a common pH optimum (approximately 8.0-8.4), and a preference for magnesium over manganese in the incubation media.