

Journal of Andrology, Vol 23, Issue 2 250-258, Copyright © 2002 by The American Society of Andrology

JOURNAL ARTICLE

Differences in sperm motion between high- and low-shuttlebox avoidance rats (Hatano strains)

M. Sato, R. Ohta, K. Kojima and M. Shiota
Hatano Research Institute, Food and Drug Safety Center, Hadano, Japan.
sato.m@fdsc.or.jp

Sperm from the caudal epididymis of 2 inbred strains of Sprague-Dawley (SD) rats, selected on the basis of their high- or low-shuttlebox avoidance responses, were analyzed for motion characteristics by a computer-assisted sperm motion analysis (CASA) system. Sperm motion in high-avoidance animals (HAA) was characterized by high velocities, high amplitude of lateral head displacement (ALH), and low beat cross frequency (BCF). Conversely, sperm from low-avoidance animals (LAA) displayed low velocities, low ALH, and high BCF. These characteristics in sperm motion were not changed by washing. Furthermore, after treatment with alpha-chlorohydrin (aCH) as a male antifertility agent affecting rat epididymal sperm motion, sperm velocities in HAA rats were significantly reduced to levels similar to those in untreated LAA rats. However, ALH and BCF in HAA rats treated with aCH were different from those in untreated LAA rats. Sperm adenosine triphosphate (ATP) content was higher in HAA than in LAA rats, correlating with values of their sperm velocities. These data suggest there are apparent strain differences in sperm motion between HAA and LAA rats and that these differences are dependent on factors, including sperm energy production.

This article has been cited by other articles:



Reproduction

[HOME](#)

M Shiota, M Sato, K Kojima, and R Ohta
Minor involvement of somatic growth in the onset of puberty of Hatano high- and low-avoidance rats
Reproduction, March 1, 2004; 127(3): 389 - 395.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

This Article

- ▶ [Full Text \(PDF\)](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)

Services

- ▶ [Similar articles in this journal](#)
- ▶ [Similar articles in PubMed](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Download to citation manager](#)

Citing Articles

- ▶ [Citing Articles via HighWire](#)
- ▶ [Citing Articles via Google Scholar](#)

Google Scholar

- ▶ [Articles by Sato, M.](#)
- ▶ [Articles by Shiota, M.](#)
- ▶ [Search for Related Content](#)

PubMed

- ▶ [PubMed Citation](#)
- ▶ [Articles by Sato, M.](#)
- ▶ [Articles by Shiota, M.](#)