

Journal of Andrology, Vol. 26, No. 6, November/December 2005  
Copyright © [American Society of Andrology](#)  
DOI: 10.2164/jandrol.05045

# Monoclonal Antibody From Vasectomized Mouse Identifies a Conserved Testis-Specific Antigen TSA70

MONALI S. WAKLE<sup>\*</sup>, SAURABH A. JOSHI<sup>†</sup> AND VRINDA V. KHOLE<sup>\*</sup>

*From the <sup>\*</sup> Department of Gamete Immuno Biology, National Institute for Research in Reproductive Health, Mumbai, India; and the <sup>†</sup> Laboratory of Cellular and Developmental Biology, NIDDK, National Institute of Health, Bethesda, Maryland.*

Correspondence to: Dr Vrinda V. Khole, Department of Gamete Immuno Biology, National Institute for Research in Reproductive Health, J M Street, Parel, Mumbai-400012, India (e-mail: vrindakhole{at}hotmail.com).

Vasectomy results in the occlusion of testicular outflow, leading to autoimmunity characterized by the production of antisperm antibodies (ASA). Reports on the rise in ASA following vasectomy in several species are available; however, not much is known about the specific sperm autoantigens to which postvasectomy antibodies are directed. In the present study, monoclonal antibodies were generated using a vasectomized mouse. One of the monoclonal antibodies, D5E5, identified an approximately 70-kd antigen localized on the principal piece of the tail and also on the tip of the acrosome of mouse sperm. The cognate antigen was expressed postmeiotically in a stage-specific manner during spermiogenesis, starting from step 8 of elongating spermatids during spermiogenesis up to mature spermatozoa. The protein was conserved across the species, as observed by its presence in rat, bull, marmoset, and human sperm. Following capacitation, the antigen on the head was seen to shift to the acrosomal region and was lost after the acrosome reaction. However, the localization on tip of the acrosome still persisted, which indicates that the antigen may play a role post-acrosome reaction in sperm egg interaction. Resistance to Triton X-100 solubilization indicates that TSA70 could be an acrosomal matrix protein. In addition, we observed a significant reduction in forward progressive motility of mouse sperm treated in vitro with D5E5. In view of its testis specificity, acrosome and tail localization, and conserved nature, TSA70 is likely to play an important role in sperm function.

Key words: Vasectomy, testicular auto antigen, acrosomal matrix, capacitation

## This Article

- ▶ [Full Text](#)
- ▶ [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 Wakle, M. S.](#)
- ▶ [Articles by Khole, V. V.](#)
- ▶ [Search for Related Content](#)

## PubMed

- ▶ [PubMed Citation](#)
- ▶ [Articles by Wakle, M. S.](#)
- ▶ [Articles by Khole, V. V.](#)

This article has been cited by other articles:



E. Prabakaran, A.H. Bandivdekar, V. Dighe, and V.P. Raghavan  
HOXBES2: A Novel Epididymal HOXB2 Homeoprotein and Its  
Domain-Specific Association with Spermatozoa

Biol Reprod, February 1, 2007; 76(2): 314 - 326.

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

---

[HOME](#) [HELP](#) [FEEDBACK](#) [SUBSCRIPTIONS](#) [ARCHIVE](#) [SEARCH](#) [TABLE OF CONTENTS](#)

[Copyright © 2005 by The American Society of Andrology.](#)