

## Expression of acid phosphatase in the seminiferous epithelium of vertebrates

R.L. Peruquetti, S.R. Taboga and M.T.V. Azeredo-Oliveira

Departamento de Biologia, Instituto de Biociências, Letras e Ciências Exatas,  
Universidade Estadual Paulista, São José do Rio Preto, SP, Brasil

Corresponding author: M.T.V. Azeredo-Oliveira  
E-mail: [tercilia@ibilce.unesp.br](mailto:tercilia@ibilce.unesp.br)

Genet. Mol. Res. 9 (2): 620-628 (2010)

Received December 22, 2009

Accepted January 17, 2010

Published April 6, 2010

DOI 10.4238/vol9-2gmr730

**ABSTRACT.** Acid phosphatases (AcPs) are known to provide phosphate to tissues that have high energy requirements, especially during development, growth and maturation. During spermatogenesis AcP activity is manifested in heterophagous lysosomes of Sertoli cells. This phagocytic function appears to be hormone-independent. We examined the expression pattern of AcP during the reproductive period of four species belonging to different vertebrate groups: *Tilapia rendalli* (Teleostei, Cichlidae), *Dendropsophus minutus* (Amphibia, Anura), *Meriones unguiculatus* (Mammalia, Rodentia), and *Oryctolagus cuniculus* (Mammalia, Lagomorpha). To demonstrate AcP activity, cryosections were processed for enzyme histochemistry by a modification of the method of Gömöri. AcP activity was similar in the testes of these four species. Testes of *T. rendalli*, *D. minutus* and *M. unguiculatus* showed an intense reaction in the Sertoli cell region. AcP activity was detected in the testes of *D. minutus* and *O. cuniculus* in seminiferous epithelium regions, where cells are found in more advanced stages of development. The seminiferous epithelium of all

four species exhibited AcP activity, mainly in the cytoplasm of either Sertoli cells or germ cells. These findings reinforce the importance of AcP activity during the spermatogenesis process in vertebrates.

**Key words:** Acid phosphatase; Reproduction; Testis; Spermatogenesis; Vertebrates