

Journal of Andrology, Vol 15, Issue 5 381-385, Copyright © 1994 by The American Society of Andrology

REVIEW

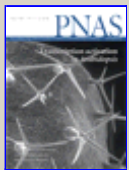
The testicular iron shuttle: a "nurse" function of the Sertoli cells

S. R. Sylvester and M. D. Griswold

Department of Biochemistry and Biophysics, Washington State University, Pullman 99164-4660.

The techniques of cell culture and molecular biology first revealed that Sertoli cells synthesize transferrin. Accumulated biological information led to a plausible model for the role of testicular transferrin in an iron shuttle system designed to transport ferric ions around the cellular tight junctions to the germ cells inside the blood-testis barrier. Experiments done in culture and in vivo have supported many aspects of this model. A mutant mouse model that lacks the ability to synthesize transferrin is defective in spermatogenesis and may help to delineate the nature of the iron requirement by germ cells. The levels of seminal transferrin, possibly of Sertoli cell origin, are proportional to sperm production in humans and cattle and may be an effective indicator of Sertoli cell function. The testicular iron shuttle thus represents an important "nurse cell" function of the Sertoli cells.

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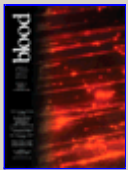
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