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## JOURNAL ARTICLE

# Selective expression of a glutathione S-transferase subclass during spermatogenesis

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Levels of the hGSTM3 glutathione S-transferase (GST) subunit in testis of the human fetus and infant were found to be only a small fraction of those in adults. To understand these observations and to determine whether hGSTM3 subunit expression is developmentally and/or hormonally regulated, an experimental model based on the rat testis homologue (subunit rGSTM5) was used. For prepubertal rats, testicular rGSTM5 subunit levels were very low, but a sharp increase was observed between weeks 6 and 7 of development, when testicular growth includes increased numbers of germ cells associated with spermatogenesis. In adult hypophysectomized rats, the rGSTM5 subunit content of testis decreased progressively over 5 weeks, at which time the subunit was barely detectable. In contrast, the other GST subunit types did not vary significantly during development or after hypophysectomy. These results suggest that rGSTM5 subunits in rat testis could originate from spermatogenic cells. Accordingly, GSTs were purified from human sperm, and it was shown that the hGSTM3 subunit was, by a large measure, the predominant form. These data are consistent with the notion that the differential expression of hGSTM3 during human testicular development can also be explained on the basis of its preferential location in germs cells.

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