Journal of Andrology, Vol 12, Issue 4 264-272, Copyright © 1991 by The American Society of Andrology

JOURNAL ARTICLE

Pituitary regulation of the expression of the farnesyl pyrophosphate synthetase gene in the testes of the sexually maturing rat

S. J. Nazian, L. D. Brewer and G. C. Ness
Department of Physiology & Biophysics, College of Medicine, University of South Florida, Tampa 33612.

While investigating the coordinate regulation of 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase and farnesyl pyrophosphate synthetase, the authors observed that rat testes contained high levels of a farnesyl pyrophosphate synthetase mRNA that was larger than that found in most other tissues. This mRNA contains upstream AUG codons that may alter its rate of translation. The developmental and hormonal regulation of this testicular mRNA were investigated. Testicular levels of farnesyl pyrophosphate synthetase mRNA increased in rats between 30 and 40 days of age and remained elevated. Significant increases in serum testosterone concentrations and secondary sexual organ weights first occurred at 50 days of age. Hypophysectomy resulted in nearly undetectable levels of testicular farnesyl pyrophosphate synthetase mRNA. Treatment of hypophysectomized rats with gonadotropins increased the levels of this mRNA toward normal. These data indicate that an increase in farnesyl pyrophosphate synthetase mRNA takes place in testes just before the onset of puberty. This may be induced by the peripubertal rise in follicle-stimulating hormone.

[Abstract] [Full Text] [PDF]

HOME HELP FEEDBACK SUBSCRIPTIONS ARCHIVE SEARCH TABLE OF CONTENTS