

Journal of Andrology, Vol 21, Issue 4 558-565, Copyright © 2000 by The American Society of Andrology

JOURNAL ARTICLE

Involvement of inhibin in the regulation of follicle-stimulating hormone secretion in the young adult male Shiba goat

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The roles of inhibin and testosterone in the regulation of gonadotropin secretion were investigated in young adult male Shiba goats (8-12 months of age). Plasma levels of inhibin but not testosterone abruptly decreased after hemicastration (75% of the initial level), concomitant with a progressive rise in plasma levels of FSH. Removal of the remaining testis at 33 days after the hemicastration quickly decreased plasma levels of both inhibin and testosterone and induced a progressive increase in plasma FSH and LH. Implantation of testosterone sheets immediately after castration suppressed the increase in plasma FSH in part only, whereas the increase in LH secretion was almost completely suppressed. An i.v. injection of antiserum against [Tyr30] porcine inhibin alpha(1-30) resulted in a significant increase in plasma FSH in a dose-dependent manner, without altering plasma concentrations of LH. These findings clearly indicate that both inhibin and testosterone physiologically regulate FSH secretion and that testosterone is the principal gonadal factor regulating LH secretion in the adult male goat.

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