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## JOURNAL ARTICLE

# A study of the effect of B-EP and naloxone on the function of the hypothalamo-pituitary-testicular axis of the rat

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To investigate whether endogenous opioid peptides (EOP) play an important role in intragonadal regulation of testicular function and regulation of the hypothalamic-pituitary-gonadal axis of the male rat, the authors employed two principal methods: culture of testicular Leydig cells and Sertoli cells, and in vitro perfusion of hypothalamo-pituitary Leydig cells of the adult rat. The results demonstrated that incubation of Leydig cells with B-endorphin (B-EP  $10(-9) = 10(-6)$  mol/L) or naloxone (NAL  $10(-5) = 10(-8)$  mol/L) manifested no significant changes of non-stimulated or hCG-stimulated testosterone secretion both in 20 and 60 day-old rats. Similar results were obtained when the cells were treated with B-EP ( $10(-10) = 10(-7)$  mol/L) for 48 h during culture. Pretreatment of incubated Leydig cells with B-EP in similar concentrations for 48 h showed no effect on the response to hCG stimulation. In addition, treatment with B-EP in vitro for 24 or 72 h manifested no effects on estradiol production by aromatization of cultured Sertoli cells. Neither NAL  $10(-5)$  given in vitro nor NAL (5 mg/body weight) injected subcutaneously 1 h before decapitation affected LH and testosterone release from the perfused hypothalamo-pituitary Leydig cells system. These results could not support the hypothesis that B-EP is a local regulator of testicular function. The physiological significance of EOP in regulating the function of gonadal axis of adult male rat remains to be investigated further.

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