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JOURNAL ARTICLE

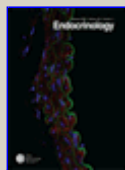
Effects of insulin-like growth factor-I on androgen production by highly purified pubertal and adult rat Leydig cells

S. J. Gelber, M. P. Hardy, S. M. Mendis-Handagama and S. J. Casella

Department of Pediatrics, Johns Hopkins University, Baltimore, Maryland.

Leydig cells were isolated and purified from adult and midpubertal rats to study the effects of insulin-like growth factor-I (IGF-I) on steroidogenesis. Androgen production, as measured in Leydig cell conditioned culture media, from four different treatment groups (1 = no hormone; 2 = 70 ng/ml IGF-I; 3 = 0.1 ng/ml LH; 4 = 70 ng/ml IGF-I + 0.1 ng/ml LH) were compared daily. After 3 days in culture, the cells were treated with a maximally stimulating dose of luteinizing hormone (LH) (100 ng/ml) for 3 hours. Androgen production was highest in the cells treated with both IGF-I and low concentrations of LH. In the presence of IGF-I, regardless of LH, cells derived from pubertal animals had a greater increase in steroidogenesis during the culture period than did cells from adult animals. Pretreatment with IGF-I prior to maximal LH stimulation induced a greater increase in androgen production in cells from pubertal rats than in cells from adult animals. It is concluded that IGF-I has a direct effect on Leydig cells and may act synergistically with LH to promote androgen synthesis. The greater response in pubertal cells raises the possibility that IGF-I is important in the maturing process of the testis.

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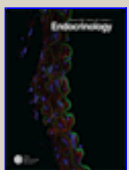
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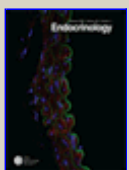


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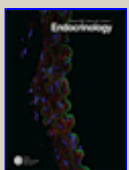
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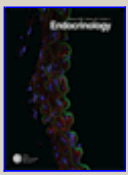
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