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## JOURNAL ARTICLE

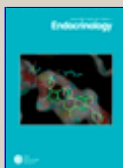
# Leydig cell cooperation in vitro: evidence for communication between adult rat Leydig cells

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In short-term incubations (32 C, 3 h) of purified adult rat Leydig cells, increasing the density from 5000 to 50,000 cells/16 mm diameter culture well caused a significant increase in human chorionic gonadotropin (hCG)-stimulated testosterone secretion/cell. Density-dependent stimulation was also observed under basal conditions and in the presence of dibutyryl cyclic adenosine monophosphate, luteinizing hormone-releasing hormone, or 22-hydroxy cholesterol. In contrast, increasing the incubation density of purified Leydig cells by addition of other testicular cells had no effect on basal or hCG-stimulated testosterone secretion. hCG-stimulated testosterone secretion by Leydig cells incubated at low density was also increased by addition of Leydig cell-conditioned medium. This stimulatory activity was removed by charcoal extraction and by ultrafiltration (approximately 30 kDa cut-off). The data indicate that Leydig cells cooperate by secretion of low molecular weight, cell-specific stimulatory factors that support Leydig cell steroidogenesis in vitro, and may also play a role in regulating Leydig cell function in vivo.

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