

Journal of Andrology, Vol 13, Issue 1 87-92, Copyright © 1992 by The American Society of Andrology

JOURNAL ARTICLE

Regulation of testosterone production in the adjuvant-induced arthritic rat

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Serum testosterone concentrations are reduced in men with rheumatoid arthritis and in rats with adjuvant-induced arthritis, a common model for rheumatoid arthritis. To understand the mechanism responsible for this reduction, testosterone production by testicular cells and Percoll-purified Leydig cells from nonarthritic and arthritic rats was studied. Leydig cells in crude interstitial cell preparations from arthritic rats secreted significantly less testosterone in response to human chorionic gonadotropin (hCG) stimulation than cells from nonarthritic animals. In contrast, no differences in hCG and dibutyryl cyclic adenosine monophosphate-stimulated testosterone production by Percoll-enriched Leydig cells from arthritic and nonarthritic animals were observed. To determine whether a secretory product from testicular macrophages was important to this reduction, macrophages from arthritic and nonarthritic animals were cultured. The conditioned media from these cultures were added to cultures of interstitial cells from nonarthritic animals. Nonarthritic rat testicular macrophage-conditioned medium had no significant effect on testosterone production. In contrast, conditioned medium from arthritic rat testicular macrophages significantly reduced testosterone production. These results suggest that testicular macrophages secrete a factor that may be important in the regulation of testosterone production in the adjuvant-induced arthritic rat.

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Cell-Cell Interactions in the Testis of Adjuvant-Induced Arthritic Rat
J Androl, July 1, 2002; 23(4): 491 - 497.
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