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## JOURNAL ARTICLE

# The effects of gonadotropin-releasing hormone immunization and recombinant follicle-stimulating hormone on the Leydig cell and macrophage populations of the adult rat testis

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The objective of this study was to investigate the role of the gonadotropins and, in particular follicle-stimulating hormone (FSH) in maintaining the Leydig cell and macrophage populations of the adult rat testis. Adult male Sprague-Dawley rats received a gonadotropin-releasing hormone (GnRH) immunogen for a period of 12 weeks in order to induce a selective deficiency in luteinizing hormone (LH) and FSH. Recombinant human FSH was then administered for 7, 14 and 21 days and macrophages and Leydig cells per testis quantified using the "optical disector" method. After GnRH immunization, Leydig cell and macrophage numbers were reduced by 18% and 68%, respectively, compared with normal controls, resulting in an increase in the ratio of Leydig cells to macrophages from 4:1 to 9:1. Leydig cells regressed morphologically following GnRH immunization, and macrophage mean nuclear diameter was significantly reduced. Administration of FSH did not restore the numbers of either cell type; however, FSH did increase macrophage nuclear size. Eosinophils and mast cells were also found sparsely scattered throughout the interstitium after GnRH immunization and persisted in the FSH-treated animals. The results of this study indicate that in the adult rat: 1) both Leydig cell and macrophage numbers are reduced in the gonadotropin-deficient testis; 2) FSH has no effect on the number of either cell type in the absence of LH; and 3) testicular macrophage activity, as indicated by nuclear size, is stimulated by FSH, either directly or indirectly.

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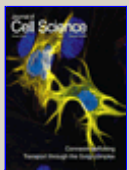
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