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Nuclear androgen receptor dynamics in testicular peritubular and Sertoli cells

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Nuclear androgen receptor dynamics were analyzed in peritubular cells and compared with those in cultured Sertoli cells. Nuclear receptors with a high affinity for [3H]dimethylnortestosterone (DMNT; mibolerone) exhibited equilibrium constants of 0.8 and 0.7 nmol, in Sertoli and peritubular cells, respectively. Time- and dose-dependent accumulation of nuclear bound receptors after exposure of whole cells to [3H]testosterone was similar for both cell types. Exogenously administered ligands demonstrated similar relative potencies as competitors with [3H]T for Sertoli and peritubular cell nuclear binding sites: DMNT greater than T greater than medroxyprogesterone acetate (MPA) greater than cyproterone acetate (CPA) tau hydroxyflutamide (OHF). Cells incubated with T or MPA showed increased nuclear androgen receptor concentrations compared to untreated controls, whereas those treated with CPA or OHF did not. These results demonstrate that the nuclear androgen receptor dynamics of peritubular cells are consistent with those of target cells. Since the dynamics are similar in Sertoli and peritubular cells, both cell types have the potential to respond to local androgen concentrations and may play important roles in androgen-dependent effects on seminiferous tubule function.

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