

# Effect of the aromatase inhibitor 4-hydroxyandrostene-3,17-dione progesterone synthesis by human luteal cells

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The authors studied the effects of 4-hydroxyandrostene-3,17-dione (4-OHA) on progesterone (P), 17 $\beta$ -estradiol (E2), and 20 $\beta$ -hydroxy-4-pregnen-3-one synthesis and pregnenolone accumulation in cultured human midluteal cells. A dose-dependent inhibition with and without human chorionic gonadotropin (hCG) of E2 and P production was observed. The accumulation of pregnenolone was significantly enhanced three to fourfold by 4-OHA in this culture system, as compared with control values. In addition, a sevenfold increase on pregnenolone accumulation was observed in the presence of 4-OHA plus 10 IU of hCG as compared with control values and 2.2-fold as compared with the 4-OHA treatments. These in vitro findings indicate a direct effect of 4-OHA on luteal steroidogenesis. Nevertheless, the suppressive effect of 4-OHA on P and E2 production is located at different sites of the steroidogenic pathway. In addition, the results demonstrate that hCG in the presence of 4-OHA stimulated pregnenolone accum