

Testosterone-induced downregulation of anti-Müllerian hormone expression in granulosa cells from small bovine follicles

Nicolás Crisosto,

Sir-Petermann, Teresa

Greiner, Monika

Maliqueo, Manuel

Moreno, Marcela

Aedo, Paola

Lara, Hernán E.

Polycystic ovary syndrome (PCOS) is characterized by the presence of hyperandrogenism and an increased follicular mass probably determined by deregulation of locally produced factors.

Anti-Müllerian hormone (AMH) is a glycoprotein that inhibits follicular recruitment and determines the size of the follicular pool. To evaluate the role of androgens in the regulation of AMH expression in bovine granulosa cells from small follicles, granulosa cells from 3 to 4 mm follicles were isolated and incubated in basal culture media, or in media containing testosterone (T) at 10^{-5} M, 10^{-8} M, or estradiol (E2) at 150 ng/ml for 48 h. AMH mRNA levels of these cells were determined using real-time PCR (RT PCR). AMH protein levels and E2 were determined in cell-conditioned media. A 3.4-fold decrease in AMH mRNA levels was observed in granulosa cells exposed to 10^{-5} M T ($P = 0.03$, $n = 5$), but not in cells exposed to 10^{-8} M T. AMH protein levels showed a 1.8-fold reduction in cell-conditioned media from ce