

Multiple mechanisms of regulation of estrogen action in the rat uterus: Effects of insulin

Rojas, Ana M.

Steinsapir, Jaime

Eosinophils appear in the rat uterus in the presence of estrogen. The level of these cells in the uterus depends on the number of blood eosinophils. Insulin is an eosinopenic hormone in the blood and, therefore, could regulate estrogenic responses mediated by these cells in the uterus.

Estrogen-induced uterine edema and eosinophilia at doses of 0.01, 0.1, 1, 10, and 30 μ g 17 β -estradiol (E2/100 g BW are inhibited by insulin. Estrogen binding by uterine eosinophils in vitro decreases in the presence of insulin, suggesting another explanation for the observations in the uterus in vivo. Injection of insulin alone or in combination with 0.001, 0.01, 0.1, or 1 μ g E2/100 g BW increases uterine RNA and protein contents by 6 h. Inactive insulin does not modify any of these stimulatory effects of estrogen. The results support the idea of two separate receptor systems for estrogens in the rat uterus: the eosinophil receptor system, which mediates estrogen-induced uterine edema, and the cytosol-n