

Effect of leptin on prolactin and insulin-like growth factor-I secretion by cultured rat endometrial stromal cells

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Abstract

Objective: To study the possible effect of leptin on PRL and insulin-like growth factor (IGF)-I secretion from rat endometrial stromal cells. **Design:** The effect of recombinant murine leptin on the secretion of PRL and IGF-I by cultured rat endometrial cells was investigated. **Setting:** Academic institutions. **Animal(s):** Laboratory bred virgin female rats aged 3-4 months. **Intervention(s):** Endometrial stromal cell (ESC) cultures in the fourth passage stimulated with 1-1,000 ng/mL of leptin for 24 hours and with 1 ng/mL leptin for 24-72 hours. **Main Outcome Measure(s):** Measurement of PRL and IGF-I levels in the conditioned media by enzyme immunoassay. **Result(s):** Endometrial stromal cells grown in vitro secreted both PRL and IGF-I into the medium and the concentrations significantly increased with passage of time even in the absence of leptin. The increase in PRL was seen mainly at 72 hours and in IGF-I at 24 and 72 hours. Presence of leptin in the culture medium (1-1,000 ng/mL) further enhanced PRL secretion in a dose-dependent manner and this effect was seen with all leptin doses used. Leptin also increased PRL secretion in a time-dependent manner and the increase was seen at 24, 48, and 72 hours. Leptin did not significantly affect IGF-I secretion either in a dose- or a time-dependent manner. **Conclusion(s):** Biological effects of leptin on the rat endometrium include dose- and time-dependent stimulatory effects on stromal cell PRL secretion.

Author keywords

endometrial stromal cells; Leptin; prolactin

Indexed keywords

EMTREE drug terms: prolactin; recombinant leptin; somatomedin

EMTREE medical terms: age distribution; animal cell; animal experiment; animal tissue; article; cell culture; cell growth; controlled study; drug effect; endometrium; endometrium cell; enzyme immunoassay; female; in vitro study; nonhuman; priority journal; prolactin release; rat; statistical significance; stroma cell

MeSH: Animals; Cells, Cultured; Endometrium; Female; Insulin-Like Growth Factor I; Leptin; Prolactin; Rats; Rats, Sprague-Dawley; Recombinant Proteins; Stromal Cells

Medline is the source for the MeSH terms of this document.