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Differential effects of porcine relaxin on the growth of two cancer cell types from different origin, MCF-7 and HeLa

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Previous studies showed that relaxin has a biphasic effect on the growth of MCF-7 human breast cancer cells with short exposure times (96hr), stimulating cell proliferation at nanomolar concentrations and inhibiting at micromolar concentrations. In this study, we determined whether relaxin also influences the growth of human adenocarcinoma cells (HeLa) of cervical tissue that has been shown to contain relaxin-binding sites and proliferate by relaxin. The cells were maintained in culture with Dulbecco's modified Eagle's medium with 5% calf serum. Highly purified porcine relaxin was added at concentrations ranging from 10^{-11} to 10^{-5} M in DMEM and cells were replenished with fresh medium and relaxin every 24 hr. After 44, 69, 94, and 118 hr incubation in the presence or absence of the hormone, cell proliferation/cytotoxicity and endogenous nitric oxide production were determined using a colorimetric MTS assay and Griess assay, respectively. The results obtained indicate that whereas relaxin promotes the growth rate of MCF-7 cells, which is in agreement with previous reports, relaxin treatment at the doses and times of exposure used in this study does not significantly influence the number of viable cells in culture of human cervical adenocarcinoma. In addition, relaxin did not significantly influence the endogenous production of nitric oxide in these cells. We conclude that relaxin may have differential effects on the growth of the two cancer cell types from different origin, MCF-7 and HeLa.