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Embroyo stimulates prostaglandin E2 production by the cow cviductal epithelial cells *in vitro*

The embryo secretes prostaglandins (PG) and accelerates its own transport through the oviduct. However, the effect of the presence of the embryo in the oviduct on the oviductal production of PG is still not well studied in the production of PG by the cow oviductal epithelial cells (COEC).

The embryo-COEC co-culture system was utilized in this purpose. In vitro matured and fertilized 40 embryos at day 3 were co-cultured in the COEC monolayer at first passage for 4 or 24 h in medium 199 (M 199). The PGE2 and PGE2α levels in the medium and cellular fraction were measured after extraction using second antibody enzyme immuno assays (EIAs). The presence of embryo resulted in a 2 fold increased in PGE2 production and release by COEC at both 4 h and 24 h after incubation. However, no significant changes in the PGF2 α production or release was observed.

The results of this study provide the first direct evidence that the developing embryo is capable to stimulate PGE2 production by the oviductal epithelial cells in vitro. The elevated secretion of PGE 2 in the oviduct in this way may actively control the local oviductal contraction, thus, the embryo may bear a role in regulation of it's own transport through the oviduct.