
**Abstract**

**Purpose**
The effect of pantothenic acid (PaA) supplementation on adrenal secretion of corticosterone and progesterone in female rats was investigated.

**Methods**
An in-vitro primary adrenal cell culture system was used. Pregnant rats were given 0.03% PaA in their drinking water throughout pregnancy and the period of lactation. In the first experiment, after weaning, female rats continued to receive 0.03% PaA treatment until 10 weeks of age. The animals were then decapitated and adrenal cells were cultured in the absence or presence of rat adrenocorticotropic hormone (ACTH) for 4 h. In the second experiment, adrenal cells from lactating rats on day 5 of lactation were cultured in the absence or presence of ratACTH for 4 h.

**Results**
The effect of ACTH at 10-10 M on corticosterone and progesterone release was greater for PaA-treated cyclic rats than for control cyclic rats. The effect of ACTH at 10-10M on corticosterone release was greater for PaA-treated lactating rats than for control lactating rats. Circulating ACTH and corticosterone levels in PaA-treated and control cyclic and lactating rats were no different.

**Conclusions**
These results indicate that PaA supplementation induced hyperresponsiveness to ACTH stimulation in cyclic and lactating female rats. These results clearly demonstrated that PaA is an essential factor in adrenal steroidogenesis of female rats.