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Do chlorinated insecticides (aldrin and DDT) or products of their transformations (dieldrin and DDE) impair signal transfer from regulators (oxytocin and relaxin) of bovine myometrium motility *in vitro*?

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## Abstract

Aldrin, dieldrin, and DDT are chlorinated insecticides that are unintentionally widespread in the environment. It was previously shown that all of the aforementioned compounds increased secretion of ovarian oxytocin (OT), which is a potent uterotonic agent. However, only DDT and its metabolite (DDE) promoted, while aldrin and dieldrin inhibited basal and OT-stimulated myometrial contractions in cows. Therefore, the aim of this study was to determine the effect of these treatments on the reception and further transmission of the OT-signal for myometrial contractions and on the levels of contractile-associated integral proteins (caveolin; CAV) and gap junction proteins (GAPs). Moreover, their effect on reception of signal for the relaxation of myometrium was also studied. Myometrial strips or cells from non-pregnant (8-12 days of oestrous cycle) or late pregnant (5-8 months) cows were incubated with the studied compounds at environmentally relevant dose (10 ng/ml), which was chosen according to the previous studies. DDT and DDE increased the CAV protein level, while dieldrin decreased the GAPs level. None of the studied compounds affected mRNA expression of the OT

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