85. Responsiveness of the Anterior Pituitary and Median eminence to ^{3}H Dopamine

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Inhibitory action of Dopamine to Prolactin secretion from the anterior pituitary is well known .Responsiveness of dopamine to anterior pituitary and median eminence in the presence of estrogen, progesterone and clomiphene under prolactin influence is not known. In the present study an increased uptake was found in anterior pituitary of estrogen treated ovarietomised rats but not in progesterone and clomiphene group. It may be concluded that under the influence of prolactin uptake of dopamine by the anterior pituitary is greatly reduced in estrogen, progesterone and clomiphene treated rats .

86. THE USE OF ANTAGONISTIC STEROIDS AND CYCLOHEXIMIDE TO STUDY GLUCOCORTICOID FEEDBACK MECHANISMS AT THE HYPOTHALAMUS.

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Feedback control of corticotrophin secretion by glucocorticoids is exercised in part at the hypothalamus, but the mechanism is not known. Using the isolated rat hypothalamus incubated in vitro and an in vitro assay of CRF we have demonstrated that both corticosterone and dexamethasone (DEX) are able to cause a biphasic inhibition of serotonin-induced release of CRF. The first phase of the inhibition is seen immediately and the second some 2h after addition of the steroid. The extent of the second inhibition (assessed at 2h) is dose-related and may be prevented by antagonistic steroids (eg. epicortisol), but not by cycloheximide. The ability of epicortisol to prevent the second phase of inhibition programmed into the tissue during the first 30min exposure to Dex is limited to that period, subsequently the antagonist is not able to 'rescue' the tissue from inhibition at 2h. These results suggest that events other than the (antagonist)-reversible binding of DEX to a putative receptor must occur for the second phase of inhibition to emerge. However, the failure of cycloheximide to prevent the inhibition by DEX argues that translational events are not required.

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87. ANDROGEN METABOLISM IN RAT PITUITARY CELLS: EFFECTS ON PRL PRODUCTION

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PRL secreting rat pituitary cells in culture metabolized ^{3}H -testosterone (T) rapidly and extensively (>90%, 96 h). 5α-Dihydrotestosterone (DHT) (55%) and 5α-androstane-3β,17β-diol (3β-diol) (31%) constituted the major metabolites, while no conversion to estrogens was observed (<0.0001%). Kinetic studies suggested that 3β-diol was formed via DHT, and that this pathway was almost irreversible. T, DHT and 3β-diol all stimulated PRL production in a time- and dose-dependent manner, and on a molar basis 3β-diol was repeatedly found to be the most potent stimulator. The effect of 3β-diol is probably not mediated through binding to the androgen receptor, since two different antiandrogens (R 2956, SCH 16428) were unable to inhibit its PRL stimulating effect. 3β-Diol was found to be a more potent inhibitor of ^{3}H -estradiol (E_2) binding to GH_3 cytosol receptor-proteins than were T and DHT. The PRL stimulating effect of E_2 was significantly decreased in cultures treated simultaneously with E_2 and 3β-diol. Both E_2 and 3β-diol caused a dose-related increase in progesterone receptor concentration in the GH_3 cells, while T had no effect when given in equimolar concentrations. Thus, our results suggest that the T-metabolite 3β-diol exerts its effect on PRL production at least partly through binding to the estrogen receptor.