Absence of direct regulation of prolactin cells by estradiol-17-beta in rainbow trout (Oncorhynchus mykiss)

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ABSENCE OF DIRECT REGULATION OF PROLACTIN CELLS BY ESTRADIOL-17B IN RAINBOW TROUT (ONCORHYNCHUS MYKISS).

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In order to study the control of Prolactin (PRL) cells by steroid in rainbow trout, the effects of estradiol-17ß implants on plasma PRL concentrations, pituitary PRL content and pituitary mRNA levels were examined. Intact immature fish treated with 1 mg estradiol-17ß did not show significant changes in both PRL mRNA levels and pituitary PRL content after 3 days treatment. In a similar experiment, no changes were observed in plasma PRL levels followed during 13 days and pituitary PRL mRNA levels measured on day 13. Similarly, lack of estradiol effect on plasma PRL levels and on final PRL pituitary content was observed in ovariectomized female rainbow trout treated during 48 days with 25 mg estradiol-17ß and in mature male fishes over a 3 weeks period. Localisation of estradiol receptor mRNA in the pituitary was carried out by Northern blot analysis using a full-length rainbow trout estrogen receptor (rtER) cDNA as a probe. The *rostral pars distalis* of the pituitary which contained mostly PRL cells shows the lower amount of rtER mRNA when compared to the other pituitary part. *In situ* hybrisation analysis allowed a more precise localisation of the rtER mRNA in the pituitary. No labelling was discernable over PRL cells whereas other pituitary parts were labelled. Grain counting corroborated this localisation. These results indicate that 1) *in vivo* estradiol-17ß treatment did not modify PRL cells activity in rainbow trout 2) PRL secretion is not directly regulated by estrogen in this fish species.

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