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## **Effects of carp hypothalamic extracts and synthetic LH/FSH-RH on the plasma level of gonadotropin in carp (Cyprinus carpio)**

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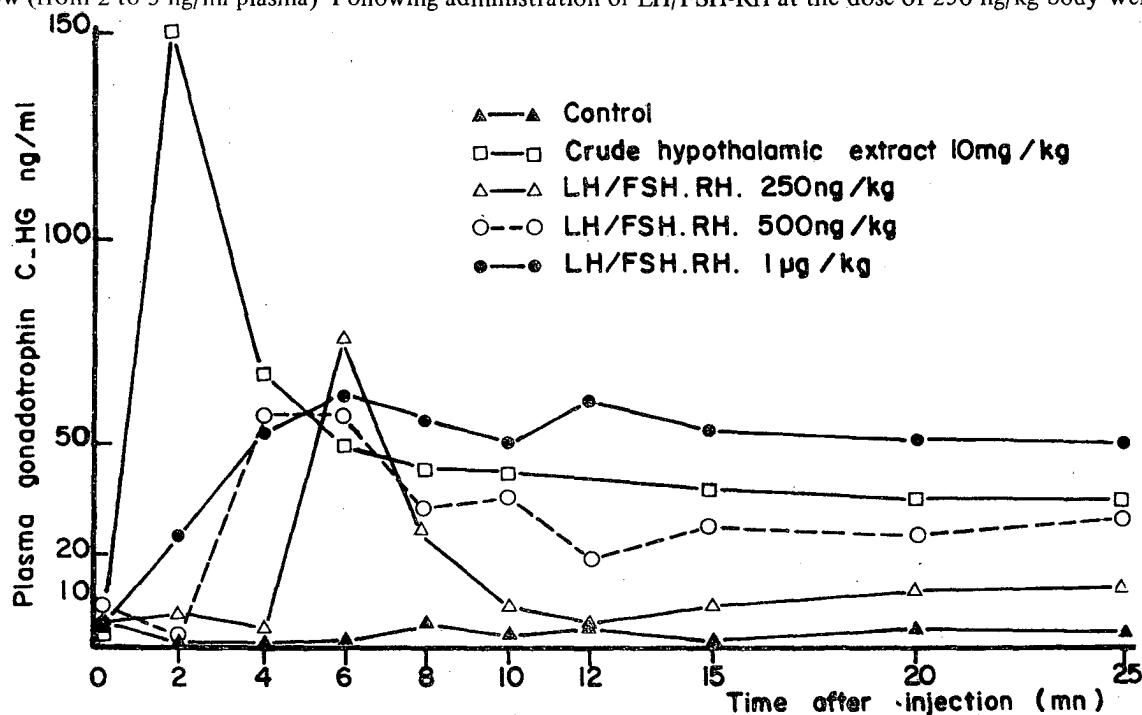
**EFFECTS OF CARP HYPOTHALAMIC EXTRACTS  
AND SYNTHETIC LH/FSH-RH ON THE PLASMA  
LEVEL OF GONADOTROPHIN IN CARP  
(CYPRINUS CARPIO)**

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Previous studies showed that partly purified carp hypothalamic extracts stimulated *in vitro* discharge of gonadotrophin; either ovine luteinizing hormone (o-LH) is released from ram pituitaries or carp gonadotrophin (c-HG) from carp pituitaries (1, 2). In the present study the *in vivo* activity of synthetic luteinizing hormone/follicle stimulating hormone releasing hormone (LH/FSH-RH) was compared with the activity of carp hypothalamus. The experiment was performed in June on running male and female carps weighing 1 kg. At this time of the year the amount of gonadotrophin was maximum in the pituitary (50  $\mu$ g of c-HG/gland or 3  $\mu$ g/mg of gland). Animals were anesthetized in a bath of 5 ppm propoxate. The experiments were conducted for the duration of 25 min. on such anesthetized animals. Through the needle of a syringe implanted in the heart, drugs were administered at the beginning of the experiment, while blood samples were collected with the same needle at 2, 4, 6, 8, 10, 12, 15, 20 and 25 min. c-HG was measured by radioimmunoassay (3). Before treatment the level of c-HG in the blood was very low (from 2 to 5 ng/ml plasma) Following administration of LH/FSH-RH at the dose of 250 ng/kg body weight,



Effects of crude carp hypothalamic extracts and synthesized LH/FSH-RH on the *in vivo* secretion of carp pituitary gonadotrophin. 2 animals out of 4 responded within 4 to 6 min. by a rise of c-HG level to 80-100 ng/ml plasma which lasted for only 5 min. When LH/FSH-RH was administered at a dose of 500 ng/kg body weight 4 animals out of 5 increased their blood level of c-HG to 60 ng/ml plasma within 4 to 6 min. 20 to 25 min. later the level of gonadotrophin was back to normal. With doses higher than 1  $\mu$ g/kg body weight responses were variable in latency: 2 to 15 min., while the levels of c-HG varied from 50 to 150 ng/ml plasma which did not return to normal after 25 min.

Conversely, following crude hypothalamic extract administration (10 mg/kg body weight = 1 or 2 hypothalami) the level of c-HG reached 150 to 400 ng/ml within 2 min. in 4 animals out of 4. The gonadotrophin level dropped to 50 ng/ml plasma after 6 min. and this value was maintained beyond 25 min. Control animals receiving 100  $\mu$ l of NaCl (8 parts per 1,000) did not show any response. It is concluded that the pattern of gonadotrophin discharge with LH/FSH-RH is different from the one obtained with the specific hypothalamic extracts.

1. Breton, B., Jalabert, B., Billard, R., Weil, C. (1971), C.R. Acad. Sci., Serie D, 273, 2591.

2. Breton, B., Weil, C., Jalabert, B., Billard, R. (1972), C.R. Acad. Sci. Paris, Serie D, 274, 2530.

3. Breton, B., Kann, G., Burzawa-Gerard, E., Billard, R. (1971), C.R. Acad. Sci. Paris, Serie D, 272, 1515-1517.

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Endocrine System

Pituitary

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