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Abstracts

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DISTRIBUTION OF SALMON GnRH mRNA IN THE BRAIN OF ATLANTIC SALMON AND RAINBOW TROUT.

Thierry BAILHACHE¹, Aïcha ARAZAM¹, Helge KLUNGLAND³, Øivind ANDERSEN³, Peter ALESTRØM³, Bernard BRETON², Christian SALIGAUT¹ and Patrick JEGO¹.

1)Laboratoire de Physiologie des Régulations - URA CNRS 256; 2)Laboratoire de Physiologie des Poissons - INRA - Campus de Beaulieu - 35042 RENNES Cédex - FRANCE ; 3)Department of Dairy and Food Industries - Agricultural University of Norway - 1432 Aas-NLH - NORWAY

Immunocytochemical studies on the distribution of Gonadotropin-Releasing Hormone (GnRH)-like material in salmonids show discordant data. For some authors GnRH-containing perikarya are restricted to the preoptic area (Schäfer et al, 1989, *Cell Tissue Res.* 257,227-235), while for others, they are widely distributed in olfactory bulbs, telencephalon and preoptic area (Review Kah, 1986, *Fish Physiol. Biochem.* 2,25-34). The different antisera used in these studies, and the presence of two major forms of GnRH in salmonids, salmon GnRH and Chicken II GnRH, could be responsible for such a heterogeneity. From this point of view, *in situ* hybridization appears to be a good alternative because it is a highly selective and sensitive method.

Using *in situ* hybridization, we have detected perikarya that contain the messenger ribonucleic acid (mRNA) encoding salmon GnRH in two teleost species, Atlantic salmon and Rainbow trout.

In situ hybridization has been performed in high stringency conditions, with ³⁵S UTP labeled riboprobe synthesized with a salmon cDNA encoding sGnRH as template.

In Atlantic salmon, sGnRH mRNA containing cells were located in the ventral olfactory bulbs, ventral telencephalon (area ventralis pars ventralis) and in the ventral part of the nucleus preopticus periventricularis.

In Rainbow trout, cross-hybridization between the salmon cDNA and the trout mRNA was first verified by Northern blot analysis. Telencephalic PolyA+ mRNAs from Rainbow trout were hybridized with the ³²P labeled salmon cDNA in high stringency conditions. This revealed a messenger of 450-500 nucleotides length, which is present in adult trout at different reproductive stages and in immature trout but in a lower amount.

In situ hybridization has been performed in Rainbow trout, and gave results which were very similar to those obtained in Atlantic salmon.

In conclusion, in the two salmonids species tested, sGnRH perikarya are located in the ventral part of olfactory bulbs, of telencephalon and of preoptic area. These results are in good agreement with our previous results obtained by immunocytochemistry in Rainbow trout and with most of the reports in other teleost species.