



**HAL**  
open science

## Distribution of salmon GnRH mRNA in the brain of atlantic salmon and rainbow trout

Thierry Bailhache, Aïcha Arazam, Helge Klungland, Oivind Andersen, Peter Aleström, Bernard Breton, Christian Saligaut, Patrick Jego

► **To cite this version:**

Thierry Bailhache, Aïcha Arazam, Helge Klungland, Oivind Andersen, Peter Aleström, et al.. Distribution of salmon GnRH mRNA in the brain of atlantic salmon and rainbow trout. 2. International Symposium on Fish Endocrinology, Jun 1992, Saint-Malo, France. 116 p., 1992. hal-02778450

**HAL Id: hal-02778450**

**<https://hal.inrae.fr/hal-02778450>**

Submitted on 4 Jun 2020

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



**2<sup>nd</sup>**

**INTERNATIONAL  
SYMPOSIUM  
on FISH  
ENDOCRINOLOGY**

*Abstracts*

**PALAIS DU GRAND LARGE**

**SAINT-MALO**

**JUNE 1 - 4 1992**



VILLE  
DE  
SAINT-MALO



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

Thierry BAILHACHE<sup>1</sup>, Aïcha ARAZAM<sup>1</sup>, Helge KLUNGLAND<sup>3</sup>, Øivind ANDERSEN<sup>3</sup>, Peter ALESTRØM<sup>3</sup>, Bernard BRETON<sup>2</sup>, Christian SALIGAUT<sup>1</sup> and Patrick JEGO<sup>1</sup>.

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 <sup>35</sup>S 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 <sup>32</sup>P 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.