



HAL
open science

Effects of prolactin on α and β chloride cells in the gill epithelium of the salt water adapted tilapia (*Oreochromis niloticus*)

Monique Pisam, Benoît Aupérin, Patrick Prunet, Alain Rambourg

► To cite this version:

Monique Pisam, Benoît Aupérin, Patrick Prunet, Alain Rambourg. Effects of prolactin on α and β chloride cells in the gill epithelium of the salt water adapted tilapia (*Oreochromis niloticus*). 2. International Symposium on Fish Endocrinology, Jun 1992, Saint-Malo, France. 116 p., 1992. hal-02775848

HAL Id: hal-02775848

<https://hal.inrae.fr/hal-02775848v1>

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.



2nd

**INTERNATIONAL
SYMPOSIUM
on FISH
ENDOCRINOLOGY**

Abstracts

PALAIS DU GRAND LARGE

SAINT-MALO

JUNE 1 - 4 1992



MINISTÈRE
DE LA RECHERCHE
ET DE LA TECHNOLOGIE



VILLE
DE
SAINT-MALO



EFFECTS OF PROLACTIN ON α AND β CHLORIDE CELLS IN THE GILL EPITHELIUM OF THE SALT WATER ADAPTED TILAPIA (*OREOCHROMIS NILOTICUS*).

Monique Pisam¹, Benoît Auperin², Patrick Prunet² and Alain Rambourg¹.

(¹)Département de biologie CEA de Saclay, 91191 Gif-sur-Yvette, France. (²)Laboratoire de physiologie des poissons INRA35042 RENNES France.

Tilapia (*Oreochromis niloticus*) of 21g of average body weight were divided into three groups. A group was maintained in fresh water. Another group was adapted for 15 days to 20 ‰ salt water while a third group adapted to 20 ‰ salt water received every two days during a week a single injection of tilapia prolactin (ti-PRL I). Gills were prepared for electron microscopy in order to determine the types and surface areas of chloride cells in each experimental condition. Two types of chloride cells, the α and β cells were easily distinguished on the basis of their location and ultrastructural features in the gills of freshwater fishes, while only one type of cell, the seawater cells presumably derived from the transformation of the α cells were encountered in saltwater adapted animals. The striking fact after PRL injection of saltwater adapted fishes was the reappearance of small chloride cells mainly located in interlamellar regions of the gills which displayed ultrastructural features similar to those of β cells in freshwater tilapia. In the same experimental conditions, the voluminous saltwater cells showed a tendency to resume ultrastructural features of the α freshwater cells from which they were derived. These observations tend to indicate that prolactin behaves as a "freshwater adapting hormone" and that β cells are specifically involved in fish adaptation to freshwater living conditions.