

Objectives of the thesis

The work conducted in the present thesis contributes to our understanding of the cellular organization of teleost fish cartilage, bone and scales and their potential role in calcium balance. In particular the distribution of extracellular matrix (ECM) proteins characteristic of skeletal tissue is evaluated as is the presence of receptors for endocrine factors. The specific objectives of the thesis were:

- 1) To describe the morphology of cartilage and bone during skeletogenesis, in sea bream (*Sparus auratus*) larvae and to characterize scale morphology in a marine species (*Sparus auratus*) and a euryhaline teleost (*Oreochromis mossambicus*);
- 2) To characterize the tissue expression of osteonectin, a major extracellular protein of bone matrix, in adult sea bream tissues;
- 3) To study the ontogeny and localization of osteonectin and relate it to the stage of skeletal development, in sea bream larvae;
- 4) To study the expression and putative cellular localization of the extracellular matrix proteins, type I collagen $\alpha 1$, type V collagen $\alpha 2$, osteonectin, fibronectin, acidic secreted protein in cartilage (ASPIC), and tartrate-resistant acid phosphatase (TRACP), in sea bream (*Sparus auratus*) and tilapia (*Oreochromis mossambicus*) scales;
- 5) To characterize the expression of the estrogens receptors (α , $\beta 1$ and $\beta 2$) which may be involve in the regulation of calcium mobilization in sea bream *Sparus auratus*) and tilapia (*Oreochromis mossambicus*) scales.