

P4. CLONING AND EFFECTS OF OSMOTIC ACCLIMATION ON GLUT1 EXPRESSION IN THE EURYHALINE FISH, GILTHEAD SEA BREAM (*Sparus aurata*).

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Gilthead sea bream (*S. aurata*) is a euryhaline fish, and therefore presents the capacity to live under different environmental salinities, expending extra energy for maintaining the homeostasis when there are osmotic differences between the internal medium and the external environment. In fish, glucose has a relevant role in osmotic stress, supplying the necessary extra energy to the osmoregulatory organs. This metabolite is a hydrophilic molecule that needs a specific transporter (GLUT) to cross plasma membrane. Several members of the GLUT family have been cloned in various fish species, but not in *S. aurata*. In this study we have cloned the *S. aurata* GLUT1 (saGLUT1). The cDNA is composed by 4483 bp, with a 5'UTR of 173 bp, ORF 1476 bp and 3'UTR which has 2616 bp, presenting high similarity to GLUT1 in other fish species (between 79 to 95 % identity). In addition, saGLUT1 mRNA expression changes in gills, kidney, liver and brain were determined by real time PCR analysis in specimens of 100-150 g body weight, acclimated to four different salinities (5, 12, 40 and 55 ppt) during 15 days. The major levels of expression were found in brain and gills (5000 and 8000 copies/10 ng RNA). Statistical differences in gills (highest expression at 40 ppt) and kidney (highest expression at 5 ppt) were detected, without any significant changes in brain and liver. Our results show that saGLUT1 mRNA expression is regulated in osmoregulatory organs in response to different environmental salinities.

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