

P008 Functional implications of family B receptor and ligand gene paralogues in teleosts

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Duplicated family B receptors and ligands have been reported in fish genomes. Their existence is in line with the proposed rounds of teleost gene/genome duplication. However, little is known about their maintenance and functional/physiological significance. In this study we have focused on the characterisation of the teleost duplicated PAC₁ receptors (family B GPCR members) and their ligand peptides. Preliminary results revealed that transcripts of paralogue receptors and ligands, have differential tissue distributions, respectively. Moreover, receptor binding studies suggests paralogues have a different activation profiles and that they are divergent from the single mammalian homologue receptor. These results are indicative that after duplication PACAP and its receptors underwent a process of sequence and functional divergence as a result of positive selection pressures within the teleost lineage. Better characterisation of duplicate receptors and ligand peptides will help elucidate the importance of function for the evolution of receptor-ligand pairs in vertebrates. **Acknowledgements:** Work supported by Fundação para a Ciência e Tecnologia/Centro de Ciências do Mar pluriannual grant. JC and FV funded by FCT grants BPD/14449/2003 and BD/17630/2004, respectively.