

# A SINGLE PARATHYROID HORMONE RECEPTOR-LIKE MEMBER OF FAMILY B1 G-PROTEIN COUPLED RECEPTORS IN *FASCIOLA GIGANTICA*

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**Abstract.** Intercellular signaling through cell membrane receptors has not only attracted basic research but also has been of high interest in the area of drug development. Family B1 G-protein coupled receptors (B1 GPCR) represent a small subfamily within the GPCR and they interact with peptide hormones. Their biological roles have mainly been studied in mammals with few functional analyses in invertebrates. Remarkably, based on current molecular sequence data trematode genomes also carry and express only a single B1 GPCR gene. In the present study we have characterized this trematode GPCR in the tropical liver fluke *Fasciola gigantica*. Sequence comparison, phylogenetic analysis and structure modeling indicate that it shares a common ancestor with chordate parathyroid receptor, known to be important for calcium homeostasis. RT-quantitative PCR of transcript from adult parasites showed sensitivity of this receptor-encoding gene to external calcium. It is speculated that the receptor has a role in the regulation of calcium ion levels in the parasite.

**Keywords:** *Fasciola gigantica*, calcium, G-protein coupled receptor, parathyroid hormone, Trematoda

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