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## Identification of light-induced genes in the brain of orange-spotted spinefoot *Siganuss guttatus*

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PS-11      **Identification of light-induced genes in the brain of orange-spotted spinefoot *Siganuss guttatus***

Ji-Gweon Park<sup>1</sup>, Yong-Ju Park<sup>1</sup> and Akihiro Takemura<sup>2</sup>

<sup>1</sup>Graduate School of Engineering and Science, University of the Ryukyus

<sup>2</sup>Tropical Biosphere Research Center, University of the Ryukyus

The orange-spotted spinefoot *Siganus guttatus* is a reef fish with a restricted lunar-synchronized spawning cycle. According to previous studies on the fluctuations of a light-sensitive clock gene (*Per2*) and circulating melatonin at night, it was suggested that this fish species can recognize cues from the moon and exert moon-related activities. In order to identify moonlight-induced genes, we screened the differentially expressed genes in the whole brain between the full and new moon period. One of several candidate genes was *Egr-1*, which belongs to an immediate-early gene, acts as a transcription factor, and plays a key role in regulating many physiological processes. The cloned *Egr-1* cDNA encoded a protein that consists of 510 amino acids, and this protein is highly homologous to *Egr-1* proteins of teleost species. The expression of *Egr-1* transcripts was higher during the full moon period than new moon period. Additionally, the exposure of the fish to light during the subjective night resulted in a rapid increase of its expression. These results suggest that *Egr-1* is a light-induced gene and its expression is affected not only by daylight but also by moonlight.