FUNCTIONAL ANALYSIS OF SMALL UBIQUITIN-MODIFIER (SUMO) IN ORANGE-SPOTTED GROUPER (EPINEPHELUS COIOIDES)

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ABSTRACT
Small ubiquitin-like modifiers (SUMOs), structurally similar to ubiquitin, ligated to lysine residues within sumoylation target proteins. Sumoylation and ubiquitination exhibit similar biological processes for post-translational modification regulation, apoptosis and protein stability which was participated in a number of cellular processes such as nuclear transport, transcriptional regulation, apoptosis and protein stability. In the present study, the cDNA of orange-spotted grouper SUMO, terms osgSUMO, was cloned by the combination of homology cloning and rapid amplification of cDNA ends polymerase chain reaction (RACE-PCR) approaches. The SUMO1 and SUMO2-yellow fluorescent protein (YFP) were distributed in the cytoplasm. Our results show that SUMO1 was capable of decreasing coat protein (CP) of nucleus localization ratio, not SUMO2. Thus, we demonstrate here that SUMO1 was able to interact with CP by using analysis of fluorescence resonance energy transfer (FRET). Taken together, grouper SUMO can partially influence on localization of CP.

KEYWORDS
Small ubiquitin-like modifiers (SUMOs), Epinephelus coioides, nodavirus, sumoylation, fluorescence resonance energy transfer (FRET)

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