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Antiangiogenic and AMP-activated protein kinase activities of *Gracilaria coronopifolia* J.G. Agardh extracts

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AMP-activated protein kinase (AMPK) is an intracellular energy sensor which is important in metabolic regulation, cell growth, and survival. Recently, dysfunction in AMPK is implicated to numerous angiogenesis-related diseases however, the mechanism remains elusive. In this study, the antiangiogenic activity of the red alga, *Gracilaria coronopifolia*, was determined through cellular signaling pathway of AMPK. Chorioallantoic membrane (CAM) assay showed that all extracts of *G.coronopifolia* inhibited angiogenesis in a dose-dependent manner. Among them, dichloromethane extract exhibited the most potent antiangiogenic activity (IC₅₀=1.21 µg/mL, p=0.215) followed by hexane extract (IC₅₀=3.08 µg/mL, p=0.479) and methanol extract (IC₅₀=8.93 µg/mL, p=0.042). Antiangiogenic activity was correlated to a low concentration of Fe, Zn and Cu of duck CAM determined using flame atomic absorption spectrometer (fAAS) and colorimetric assay. Likewise, *in vitro* AMPK signaling assay showed that all extracts activated AMPK, with dichloromethane extract having the lowest EC₅₀ of 70.2 µg/mL. Thin layer chromatography (TLC) and gas chromatography-mass spectrometry (GC-MS) revealed the active component of each extracts. Notably, this is the first report on the AMPK activity of *G.coronopifolia* related to new blood vessel formation and a colorimetric-based correlation of angiogenesis based on Fe, Zn and Cu concentration in the duck chorioallantoic membrane.

Biography

Katrin Mae M Ortega has completed her Master of Science in Pharmacy from of University of Santo Tomas, Philippines.

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