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Ascochlorin acts as an anti-inflammatory agent in LPS-stimulated RAW264.7 macrophages: Down-regulation of COX-2 and iNOS through suppression of ERK, JNK and p38 MAPK

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Inflammation is involved in numerous diseases such as cancer, intestinal inflammation and diabetes. Ascochlorin (ASC) is isolated from an incomplete fungus, *Ascochyta viçiae* and known to have an antibiotic and antifungal activity. However, anti-inflammatory effect in lipopolysaccharide (LPS)-induced murine macrophages RAW 264.7 by ASC is unclear. In this study, data showed that ASC significantly suppressed the production of nitric oxide (NO) in LPS-stimulated RAW 264.7 cells. And ASC also decreased expressions of inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) in protein levels as well as mRNA levels in a dose-dependent manner. Furthermore, ASC also suppressed LPS-induced phosphorylation of mitogen activated protein (MAP) kinases. In addition, reduction of viability was observed after ASC treatments in raw 264.7 cells. And an up-regulation of Bax (BCL-2-associated X protein) and a down-regulation of Bcl-2 (B-cell lymphoma 2) were appeared that ASC promotes the apoptosis. These findings proposed that anti-inflammatory effects and apoptotic cell death by ASC lead to the immunosuppressive activity in RAW 264.7 cells.

Biography

Sook-Hyun Lee graduated from Food Science and Biotechnology Department, Dongnam Health College, Suwon, Korea in 2011. Presently Master course student at the Molecular and Cellular Glycobiology Lab, Department of Biological Science, Sungkyunkwan University, Suwon, Korea under supervisor Prof. Cheorl-Ho Kim.

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