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Anti-inflammatory activities of K-36 through the inhibition of NF-κB activation

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Abstract

A naturally occurring K-36 was isolated from the edible fungus *Taiwanofungus camphoratus*. It has been used for intoxication, diarrhea, abdominal pain, itching, and liver cancer. In order to evaluate the actions of this compound, this study was performed on anti-inflammatory activities. K-36 was evaluated for anti-inflammatory activity using LPS-induced inflammatory effect model in RAW 264.7 cells. The anti-inflammatory activity of K-36 was evaluated by nitric oxide under MTT safety tests. K-36 was tested in the inhibitor of mitogen-activated protein kinase (MAPK) [extracellular signal-regulated protein kinase (ERK), c-Jun NH(2)-terminal kinase (JNK), p38], and nuclear factor-κB (NF-κB), cyclooxygenase-2 (COX-2) and inducible nitric oxide synthase (iNOS) protein expressions in LPS-stimulated RAW264.7 cells by the western blot methods. When RAW264.7 macrophages were treated with K-36 together with LPS, a significant concentration-dependent inhibition of NO production was detected. Western blotting revealed that K-36 blocked the protein expression of iNOS, and NF-κB in LPS-stimulated RAW264.7 macrophages, significantly. The anti-inflammatory activities of K-36 might be related to decrease the levels of iNOS through the suppression of NO. This study presents the potential utilization of K-36, as a lead for the development of anti-inflammatory drugs.

Key words: K-36, *Taiwanofungus camphoratus,* NF-κB pathway, Anti-inflammatory activities