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Anti-inflammatory activities of triterpene lactones from *Lactuca sativa*

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Abstract

Lactuca sativa (lettuce) is a famous vegetable which is also used traditionally for management of inflammatory conditions. Aim of the study was to isolate and identify potential bioactive compounds that might be involved anti-inflammatory activity of *Lactuca sativa*. 3,14-Dihydroxy-11,13-dihydrocostunolide (compound **1**) and 8-Tigloyl-15-Deoxyl-actucin (compound **2**) were isolated from extract of *Lactuca sativa*. Both compounds showed substantial lipoxygenase inhibitory activity. Similarly, the isolated compounds revealed significant ($p<0.05$) *in-vivo* anti-inflammatory activity based on carrageenan induced paw edema model. Significant results of the isolated compounds indicate their considerable potential to be further studied at molecular and cellular level.

Keywords: triterpene lactones; lipoxygenase; anti-inflammatory activity; *Lactuca sativa*

Introduction

Lactuca sativa (lettuce, family Compositae) is a well-known vegetable as well as a medicinal plant is consumed globally. Traditionally it is famous for its use as folk remedy for inflammation, pain, stomach problems including indigestion and for lack of appetite (Sayyah et al., 2004). Considerable pharmacological studies have been conducted to evaluate therapeutic significance of the crude extracts of *Lactuca sativa*. *Lactuca sativa* showed Anticonvulsant, sedative-hypnotic, antioxidant, analgesic and anti-inflammatory activity (Sayyah et al., 2004). Substantial research work has been done to identify chemical constituents of *Lactuca sativa*. Various classes of natural products have been isolated from L. sativa, so far. These classes include sesquiterpene lactones (Mahmoud et al., 1986), phytols (Bang et al., 2002), carotenoids (Kimet et al., 2007), polyphenol oxidase and phenols (Altunkaya &

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