



RESEARCH ARTICLE

NEW PHENOLIC GLYCOSIDES FROM ROOTS OF *ACTAEA SPICATA* LINNEAUS

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***Actaea spicata* Linn. (Ranunculaceae) has been traditionally used for the treatment of various ailments such as rheumatism, inflammation, nerve diseases, lumbago, scrofula and chorea. Despite a long tradition of use, no systematic phytochemical work has been carried out on this potential plant. The present investigation was undertaken to isolate and characterize phenolic compounds from ethyl acetate fraction of methanol extract of *A. spicata* roots. Column chromatography of polyphenol rich ethyl acetate fraction of methanol extract of *A. spicata* yielded two new phenolic constituents characterized by various spectroscopic techniques such as FT-IR, ¹H NMR and ¹³C NMR, and identified as 4 C-glucosyl-3, 5-dihydroxy-2-methoxy benzoic acid and its acetyl derivative 5-acetoxy-4 C-glucosyl-3-hydroxy-2-methoxy benzoic acid.**

Key words: *Actaea spicata*, Column chromatography, Polyphenols, Benzoic acids, Spectroscopy.

INTRODUCTION

Actaea spicata Linn., commonly known as Baneberry and Grapewort, belongs to family Ranunculaceae (Figure 1). A survey of ethnopharmacologic records reveals that the plant has been traditionally used in the treatment of rheumatism, inflammation, rheumatic fever, lumbago, scrofula, nervous disorders, chorea, and as emetic, expectorant, laxative, stomachic and purgative (Chopra *et al* 1956; Khare, 2007; Duke *et al* 2008). The plant has also been used in traditional systems of medicines of various countries for the treatment of snake bite, asthma, and externally for skin complaints. In some parts of Europe the powdered leaves, stems and flowers are used as an insecticide (Kirtikar and Basu, 1975). *A. spicata* has been reported to contain isoquinoline alkaloids magnoflorine, corytubrine; triterpene glycosides including actein and trans-aconitic acid (Fleming and Gruenwald, 2000). Trans aconitic acid, isolated from ethanolic

fractions of *A. spicata*, was found to exhibit cytostatic action against Ehrlich's ascites tumour (Nikonov and Syrkin-Krugliak, 1963). An exhausted literature survey on *A. spicata* revealed that sporadic phytochemical and pharmacological reports are available on this plant. As *A. spicata* has been used traditionally for the treatment of various ailments, this plant holds great potential for in depth phytochemical and pharmacological evaluations. The present investigation was aimed at isolation of novel phytoconstituents from ethyl acetate fraction of methanol extract of *A. spicata* roots and their characterization by spectroscopic techniques.

MATERIALS AND METHODS

Plant material

Dried roots of *A. spicata* were procured from K. R. Indo German American Trading company, Kurukshetra (Haryana), India in the month of November 2008. Identity of the plant was