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Abstract

Echinophorin D a new polyacetylene from an edible plant, *Echinophora platyloba* aerial parts

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Background and objectives: The aerial parts of *Echinophora platyloba* are added to cheese and yoghurt for flavoring. Besides, it is used for the treatment of flatulence and as air freshener. Despite several pharmacological studies on the plant, no attempt has been made to isolate non-volatile secondary metabolites from this plant. So, phytochemical investigation seems to be useful for better use of this plant in and to discover new compounds. **Methods:** Powdered aerial parts of the plant were extracted by Soxhlet apparatus with hexane, dichloromethane (DCM) and acetone. The concentrated acetone extract was fractionated using silica open column and mixture of heptane and ethyl acetate while DCM extract was fractionated by reverse phase column chromatography on RP-18 sorbent using mixture of methanol and water as solvent system with decreasing polarity. All subfractions were analysed by ^{1}H- NMR, COSY, HSQC, HMBC and ^{13}C-NMR. **Results:** After column chromatography and HPLC purification of DCM extract one new polyacetylene compound called echinophorin D was obtained and one fatty acid (coriolic acid) and one esteric polyacetylene (echinophorin B) were isolated and identified from the acetone extract. **Conclusion:** Due to the isolation of coriolic acid for the first time from this genus and the role of this fatty acid in inflammatory processes and anticancer activity as well as isolating polyacetylene compounds which have antioxidant and anti-tomur activity, this plant can be used as a source for compounds with antioxidant and anticancer effects.

Keywords: acetone extract, coriolic acid, *Echinophora platyloba*, echinophorin B, polyacetylene

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