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Isolation and structural characterization of bioactive molecules from Algerian Medicinal Plant: *Fumaria capreolata* L, by Nuclear Magnetic Resonance (NMR)

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Abstract

The objective of the present study is the knowledge and valorisation of Algerian natural resources. Our work focused on the extraction, analysis and purification of bioactive molecules of the species *Fumaria capreolata* L harvested from the Edough region, in the North-east of Algeria. This study was carried out on a Medicinal Plant endemic to the Edough peninsula in Seraidi, in Annaba Province: *F. capreolata* L. Fumitory or *F. capreolata* L. is widely used in traditional Algerian medicine in case of hepatobiliary dysfunction and for the treatment of skin pathologies (Gilani *et al.*, 2005).

After extraction of the powder of the aerial part of *F. capreolata* L with ethanol we obtained a crude extract, and the liquid/liquid extraction of the latter by different types of solvents and in several steps, allowed us to obtain three phases: an organic phase, a total alkaloids phase and a basic aqueous phase. The fractionation of the ethanolic extract of the species *F. capreolata* L. harvested in the Edough region (Annaba, Algeria) and the analysis of the fractions obtained by Nuclear Magnetic Resonance (NMR) led to the isolation and purification of four compounds, including two fatty acids that were isolated from the organic phase: a saturated fatty acid: palmitic acid and a polyunsaturated omega-6 fatty acid: linoleic acid. Two alkaloids were also isolated from this extract, one is a spiro-isoquinoline alkaloid: parfumine and the other an isoquinoline alkaloid: protopine.

Keywords: *Fumaria capreolata* L, Bioactive molecules, NMR Analysis, Alkaloids.