

Rapid Separation of flavonoids from dichloromethane extract of *Centaurea melitensis* L. (Asteraceae) by Fast Centrifugal Partition Chromatography and antibacterial activity

Nadjet MEZACHE,^{a*} Fadila RAHMOUNÉ^b and Hocine LAOUAR^b

^a University of Setif 1, Faculty of Sciences, Department of chemistry, Algeria.

^b University of Setif 1, Faculty of Natural and Life Sciences, Department of Biology and vegetal Ecology, Algeria.

E-mail: mezachenadjet@yahoo.fr

Abstract. The *Centaurea* (Asteraceae) genus is known to contain phenolic compounds, including flavonoids which are generally associated with significant activity. To develop an efficient preparative isolation procedure for bioactive compounds with a high-yield, fast centrifugal partition chromatography (FCPC) was optimized to purify hispidulin **1** (5,7,4'-trihydroxy-6-méthoxyflavone) and eupafolin **2** (5,7,3',4'-tetrahydroxy-6-méthoxyflavone), major constituents from *Centaurea melitensis* L. dichloromethane extract in a single step at the same time as compared to fractionation from this semi-polar extract by conventional solid-liquid chromatography procedure. The purification yield, purity, time and solvent consumption per procedure are described. The structures were established on the basis of UV, 1D and 2D NMR and mass spectroscopy analysis. The antibacterial activity was evaluated on the dichloromethane extract and their two flavones isolated. Therefore, *Pseudomonas aeruginosa* ATCC 27853, which is classified among the most resistant bacteria (*Gram-negative*), is founded sensitive to eupafolin **2** at a concentration of 1500 µg/mL.

Keywords: Centrifugal Partition Chromatography, Flavones, *Centaurea*, Asteraceae, Antibacterial activity.