

## **Extraction of the Volatile Oils of Dictyopteris Membranacea by Focused Microwave Assisted Hydrodistillation and Supercritical Carbon Dioxide: Chemical Composition and Kinetic Data**

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**Abstract :** The Supercritical carbon dioxide (SFE) and the focused microwave-assisted hydrodistillation (FMAHD) were employed to isolate the volatile fraction of the brown alga Dictyopteris membranacea from the crude extract. The volatiles fractions obtained were analyzed by GC/MS. The major compounds in this case: dictyopterene A, 6-butylcyclohepta-1,4-diene, Undec-1-en-3-one, Undeca-1,4-dien-3-one, (3-oxoundec-4-enyl) sulphur, tetradecanoic acid, hexadecanoic acid, 3-hexyl-4,5-dithia-cycloheptanone and albicanol (this later is present only in the FMAHD oil) are identified by comparing their mass spectra with those reported on the commercial MS data base and also on our previously work. A kinetic study realized on both extraction processes and followed by an external standard quantification has allowed the study of the mass percent evolution of the major compounds in the two oils, an empirical mathematical modelling was used to describe their kinetic extraction.

**Keywords :** dictyopteris membranacea, extraction techniques, mathematical modeling, volatile oils

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