

Formulation and Physicochemical Characterization of Terpenocannabinoid-Functionalized Hemp Oil Emulsifier: Assessment of Topical Anti-Inflammatory, Antinociceptive, Wound Healing activity and Cutaneous Toxicity Effects

Amira Metouekel¹, Hind Zejli², Mohamed Chebaibi³, Youssef Lefrioui⁴, Dalila Bousta⁴, Hamid EL Amri⁵, Elmostafa El Fahime⁶, Saïd El Kazzouli^{1*} and Nabil El Brahmi^{1,*}

¹ Euromed Research Center, School of Engineering in Biomedical and Biotechnology, Euromed Faculty of Pharmacy Euromed University of Fes (UEMF), Meknes Road, Fez 30000, Morocco.

² Laboratory of Engineering, Electrochemistry, Modeling and Environment, Faculty of Sciences Dhar El Mahraz, Sidi Mohammed Ben Abdellah University, B. P. 1796 Fes-Atlas, Morocco.

³ Ministry of Health and Social Protection, Higher Institute of Nursing Professions and Health Techniques, Fez, Morocco

⁴ National Agency of Medicinal and Aromatic plants, Taouante, Morocco.

⁵ Institute of Genetic Analysis of the Royal Gendarmerie in Rabat (LRAM), Ibn Sina Av., Agdal, Rabat, Morocco.

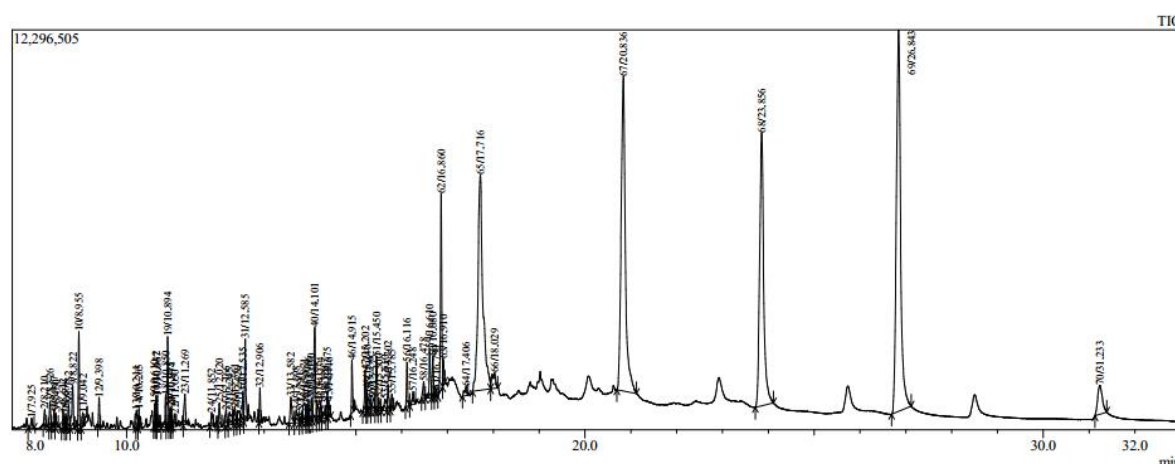
⁶ National Center for Scientific and Technical Research (CNRST), Angle Avenues des FAR and Allal El Fassi, Hay Ryad, Rabat 10102, Morocco.

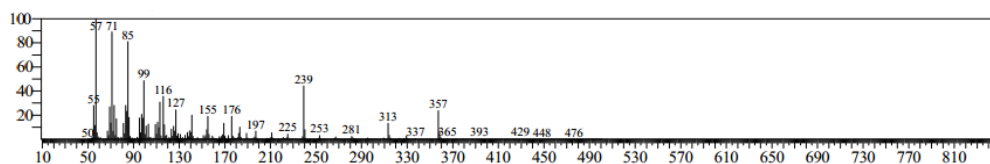
* Correspondence: n.elbrahmi@ueuromed.org; Tel.: +212667306706

Supplementary Data file

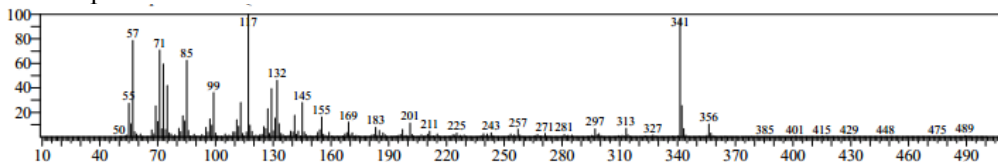
For 3.2. Active Compound Composition and Fatty acid Characterization section

I- Fatty acid and bioactive compound GC/MS/MS chromatogram from AMCana-Oils

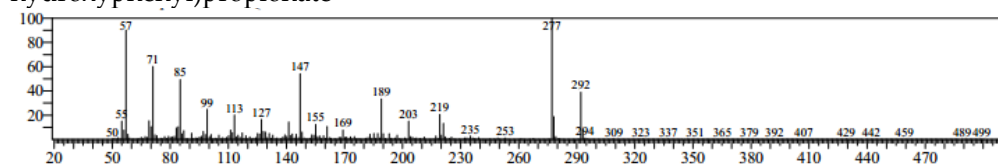




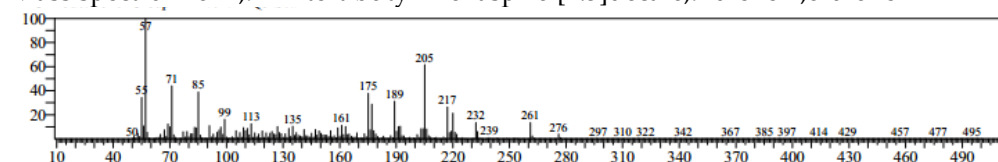
1- Mass spectrum of stearic acid



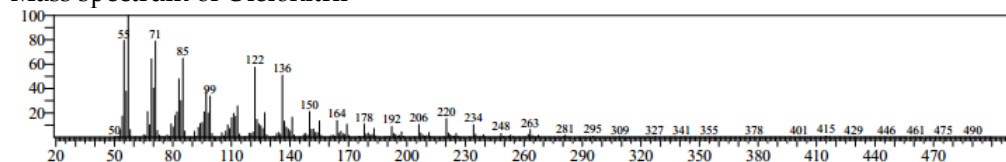
1- Mass spectrum of Benzenepropanoic acid Or Methyl 3-(3,5-di-tert-butyl-4 hydroxyphenyl)propionate



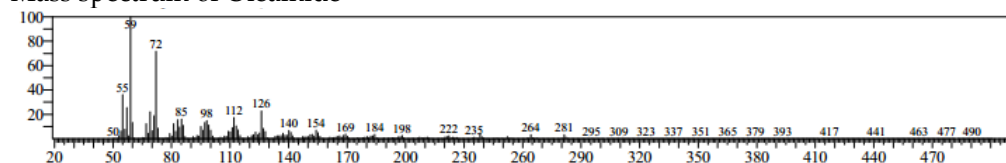
2- Mass spectrum of 7,9-Di-tert-butyl-1-oxaspiro [4.5]deca-6,9-diene-2,8-dione



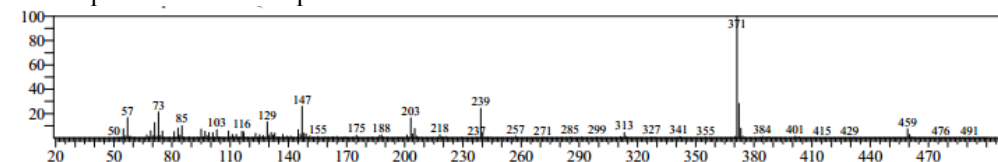
3- Mass spectrum of Oleonitril



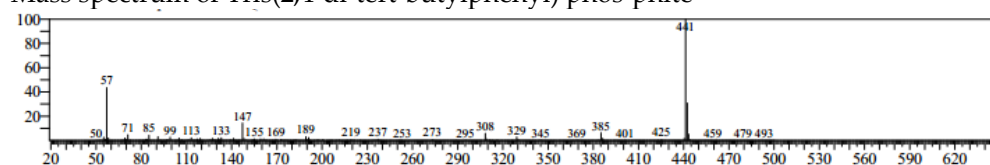
4- Mass spectrum of Oleamide



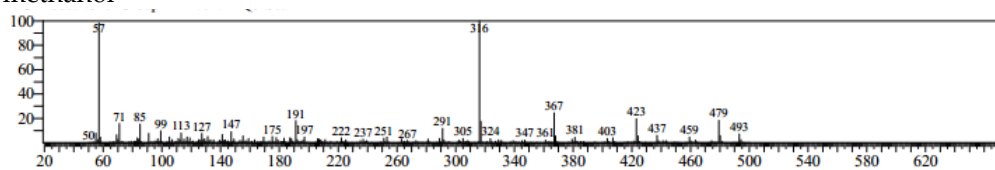
5- Mass spectrum of Monopalmitin



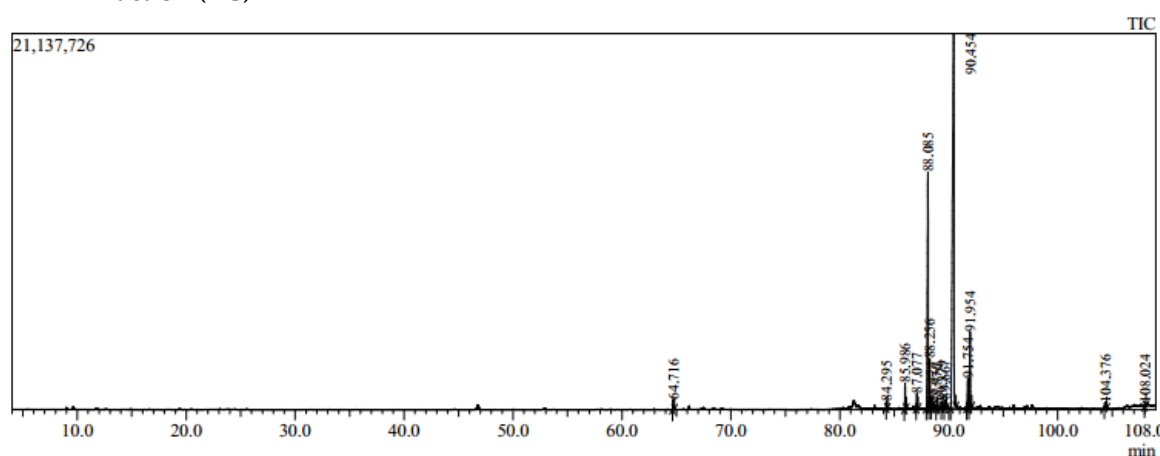
6- Mass spectrum of Tris(2,4-di-tert-butylphenyl) phos-phite



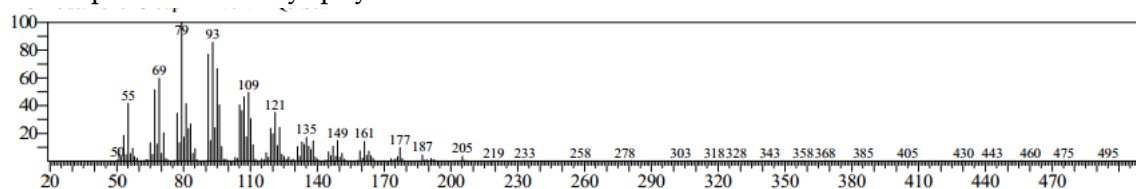
- 7- Mass spectrum of 4,5,7-Tris(1,1-dimethylethyl)-3,4-dihydro-1,4-epoxynaphthalene-1(2H)-methanol



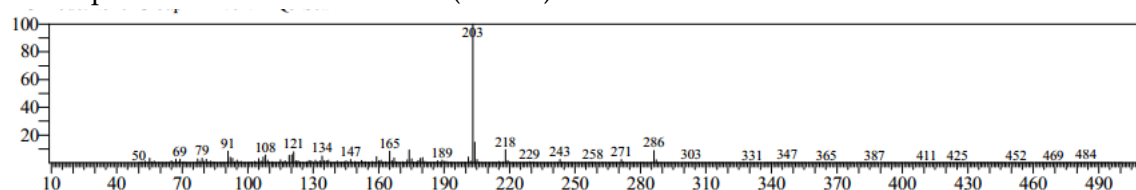
II- GC/MS/MS chromatogram of the bioactive compounds in the terpenocannabinoid fraction (TC)



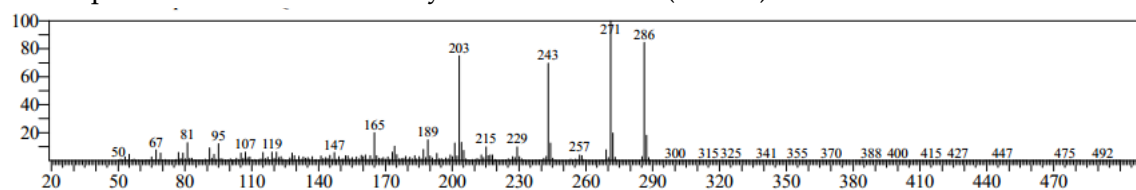
- 1- Mass spectrum of Caryophyllene oxide



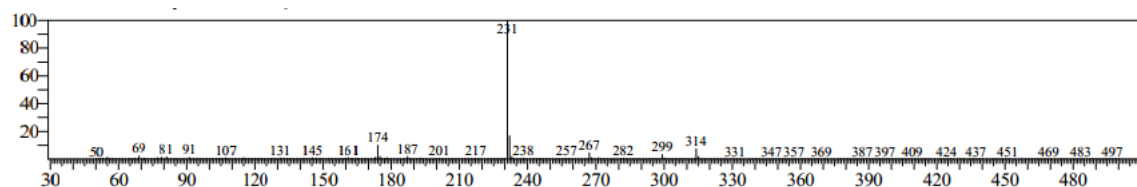
- 2- Mass spectrum of Cannabidiol (CBDV)



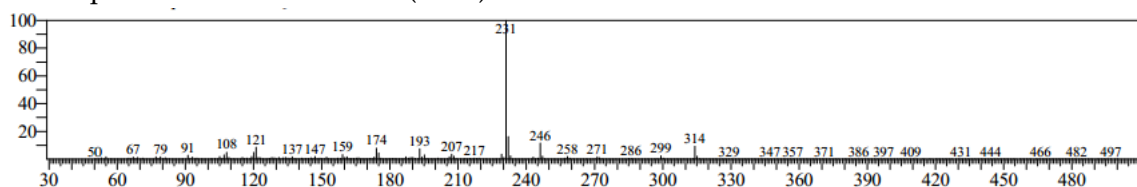
- 3- Mass spectrum of Delta-9-Tetrahydrocannabinol (THCV)



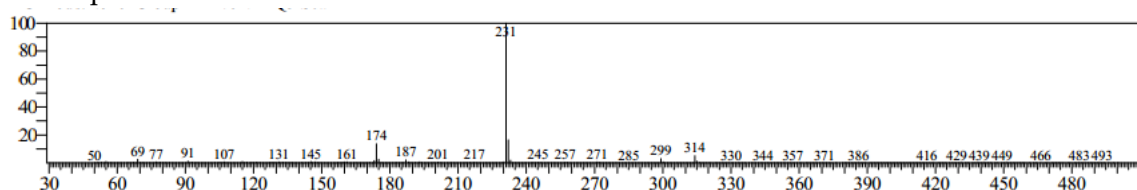
- 4- Mass spectrum of Cannabinol



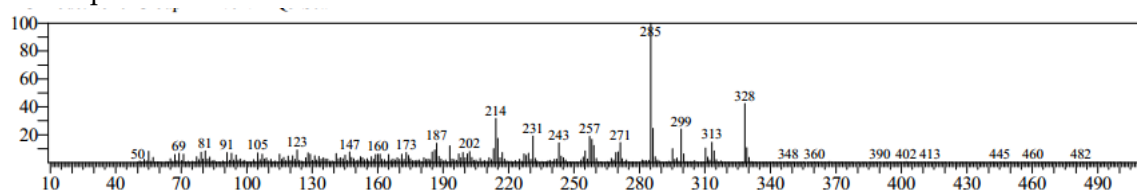
5- Mass spectrum of Cannabidiol (CBD)



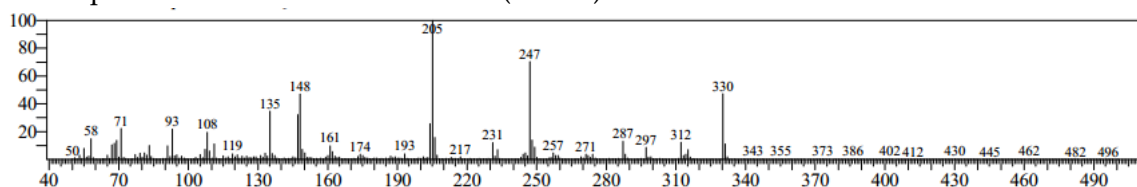
6- Mass spectrum of Cannabichromene



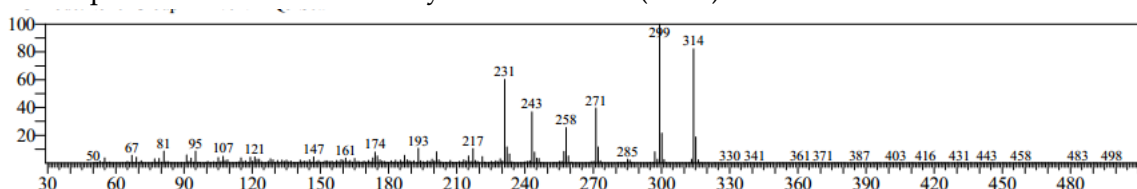
7- Mass spectrum of Cannabichrome-ronone



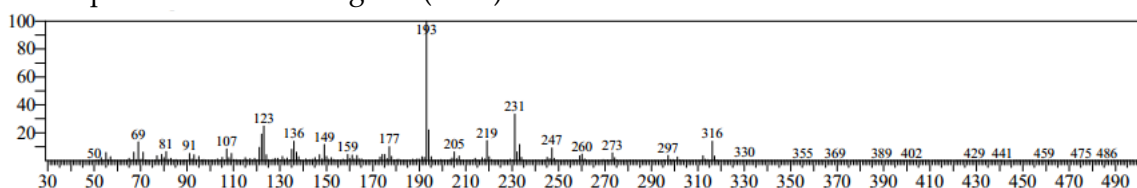
8- Mass spectrum of Cannabielsoin Acid (CBDA)



9- Mass spectrum of Del-ta9-Tetrahydrocannabinol (THC)



10- Mass spectrum of Cannabigerol (CBG)



11- Mass spectrum of Cannabinol

