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TOP ACHIEVEMENTS 2021

FACULTY OF TECHNOLOGY

Paper in a journal - M21a: Antioxidant and enzyme-inhibitory activity of peppermint extracts and essential oils obtained by conventional and emerging extraction techniques

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Journal Food Chemistry

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Peppermint is widely used medicinal plant with distinguished bioactive potential, therefore, the aim of presentwork was to develop novel peppermint extracts with high activity by application of traditional and emergingseparation techniques. Conventional hydrodistillation and microwave-assisted hydrodistillation (MWHD) wereapplied for recovery of essential oil (EO), while organic solvent extraction using Soxhlet apparatus, microwave-assisted and ultrasound-assisted process and supercriticalfluid extraction (SFE) were applied for non-selectiverecovery of peppermint lipophilic extracts. Extracts were characterized in terms of terpenoids profile withspecial emphasis on content of major compounds (mentol, menthone, isomenthol and eucalyptol). Antioxidantactivity (DPPH, ABTS, CUPRAC, FRAP, chelating and phosphomolybdenum assay) and enzyme-inhibitory assays(acetylcholinesterase, butyrylcholinesterase, tyrosinase, amylase and glucosidase inhibition) were used forscreening of peppermint bioactivity. MWHD was recognized as alternative for traditional process in EO recovery,while SFE extracts were useful for green production of solvent-free peppermint extracts rich in terpenoids andother lipophilic bioactives

