

recent advances in chemistry and plant

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Effects of Brazilian and Bulgarian propolis
 um. International Immunopharmacology, 5,

antibiotic prodrugs from

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(MDR) bacteria continue to be
 ng for new antibiotics to combat
 y. The aim of this research is to
 . Actinomycetes are a prominent
 use some 70% of all antibiotics
 ese bacteria have more potential
 leved. Therefore, new efforts are
 otics with a new mode of action.
 from remote mountain areas, in
 ressed antibiotics using specific
 e actinomycetes were found to
 SKAPE category, typically under
 was applied here for prioritizing
 ie optimal production media and
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 ted by statistical and multivariate
 ie bioactive components. By this
 ructural motif were discovered,
 ucidation of novel compounds,
 y the actinomycetes.

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P1L50 Chemotaxonomic and biological activities of Tunisian *Eryngium* species

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The essential oils of six Tunisian *Eryngium* species obtained by hydrodistillation (Cle-
 venger apparatus) were analyzed by coupled Gas Chromatography-Mass Spectrome-
 try (GC-MS). Falcarinol (0.6 – 98%), terpenes mainly sesquiterpenes (11 – 66%), and
 mono- and di-terpenes (0.1 – 2.6%) as minor constituents, have been identified. The
 petroleum ether, dichloromethane and methanol extracts of aerial parts and roots of
 these species were tested against 36 bacteria and yeast using the microdilution assay
 and their cytotoxicity was evaluated. The petroleum ether extract of roots of *E. triquetrum*
 was the most active with an IC₅₀ up to 0.07 mg/ml. Bio-guided fractionation of this extract
 was conducted and led to the isolation of seven compounds. Photoactivation^[1] of the
 plant extracts has also been investigated and irradiation with UVA wavelengths results in
 a higher, light-enhanced, antimicrobial activity.

Keywords: *Eryngium*, GC-MS, Antimicrobial activity, Photoactivation

References:

[1] Hudson J. B, Towers G. H. N. Therapeutic potential of plant photosensitizers. *Pharmac Ther* 1991; 49:
 181-222

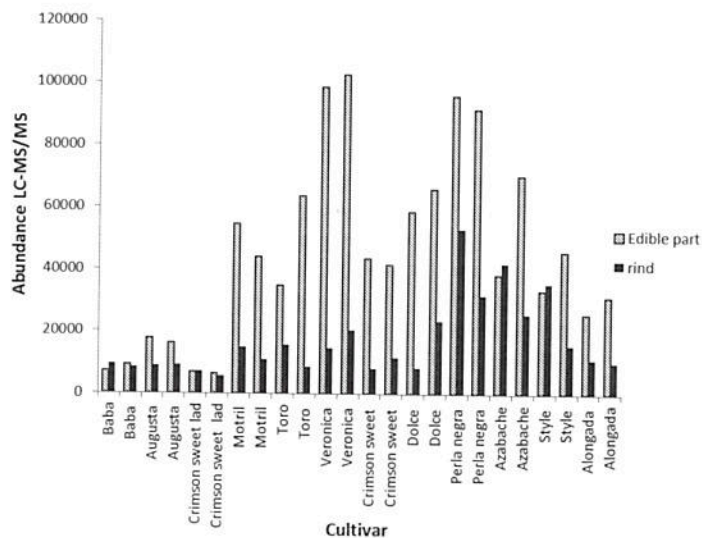
P1L51 Identification of citrulline in different parts of watermelon by liquid chromatography with mass spectrometry (LC-MS/MS)

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Watermelon is one of the commonly consumed fruits in many of countries. This highly
 consumed fruit, once being only a summer food is currently becoming an everyday fruit
 [1]. The aim of this work was to identify bioactive compounds in rind and edible part of
 watermelon from different cultivars (crimson sweet, augusta, baba, motril, toro, veronica,
 dolce, perla negra, azabache, style and alongada). Quality parameters were also deter-
 mined (pH, acidity, total soluble solids, lycopene, total phenolic and antioxidant activity).
 Liquid chromatography coupled with electrospray ionization tandem mass spectrometry
 was used for the tentative identification of compounds. Analyzing chromatograms of

edible part and rind, we observed distinct profiles and in both rind and edible part we could identify citrulline. Citrulline is used in the nitric oxide system in humans and has potential antioxidant and vasodilatation roles. Based on obtained results citrulline was more abundant in edible part comparatively with rind in the most cultivars (Figure 1). Significant differences were found in citrulline values when comparing cultivars. Principal component analysis was used to evaluate the correlation of citrulline with quality parameters. Citrulline demonstrates negative correlation within pH, total soluble solids and lycopene, in edible part, whereas in rind the citrulline levels were independent from these parameters. In conclusion these results indicate that watermelon is a natural and rich source of the non-essential amino acid citrulline. Furthermore, watermelon rind shown that is a rich source of citrulline and may yield a useful product from an agricultural waste.



Keywords: citrulline, watermelon, LC-MS/MS

References:

[1] Abu-Reidah IM, Arráez-Román D, Segura-Carretero A, Fernández-Gutiérrez A. Profiling of phenolic and other polar constituents from hydro-methanolic extract of watermelon (*Citrullus lanatus*) by means of accurate-mass spectrometry (HPLC-ESI-QTOF-MS), *Food Res Int* 2013; 51: 354-362.

P1L52 Antiviral activity of *p*-hydroxyacetophenone isolated from *Artemisia morrisonensis* against hepatitis B virus *in vitro*

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The compound *p*-hydroxyacetophenone (PHAP) isolated from *Artemisia morrisonensis* was found to have potential anti-HBV effects in HepG2 2.2.15 cells. We clarified its antiviral mode further and HBV-transfected Huh7 cells were used as the platform. During viral gene expression, treatment with PHAP had no apparent effects on the viral precore/