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## Total phenolic content, antioxidant activity and cytotoxicity on *Vibrio fischeri* of herbal blends infusions from Greek flora: A synergism evaluation

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Herbs have been used in medicines and gastronomy throughout the mankind history. So far, a large number of herbal species have been credited for providing wholesome effects such as antioxidant, anti-inflammatory, neuroprotective and so on. Herbs are commonly consumed as infusions or decoction either individually or in blends. According to literature infusions of blended herbs where multiple active components are combined, show synergistic or additive effect of the substances. Synergy is defined as the interaction of two or more agents to produce a combined effect greater than the sum of their individual effects. In this study infusions of herbal blends - three combinations from seven plants; camomile, lavender, linden, sage, wormwood, yarrow and valerian were examined for the synergistic activity of volatile and water soluble compounds. Infusions were prepared by stepping 1g of dried ground plant material to a teabag in 100ml of boiled water for 10 min. Extraction with diethyl ether followed to receive the volatile compounds. Total phenolic content and antioxidant activity were determined by Folin-Ciocalteu and DPPH assay, respectively. Toxicity assessment was estimated based upon the 81.9% protocol, expressed as EC<sub>50</sub> value. The processes above were performed for infusion and the aquatic phase after the extraction. These methods were conducted for infusions of herbal blends and of individual herb. The synergistic activity of volatile and water soluble substances were evaluated by the formula of synergistic ratio (SR) and thus, defines the possible interaction between blend infusion and the interaction presented in the infusions of plants individually.

### Recent Publications:

1. Fotakis C et al (2016) Metabolic and antioxidant profiles of herbal infusions and decoctions. Food Chem. 211: 963–971.
2. Zhou X et al (2016) Synergistic effects of Chinese herbal medicine: A comprehensive review of methodology and current research. Front Pharmacol. 7: 201.
3. Skotti E, Anastasaki E, Kanellou G, Polissiou M and Tarantilis P (2014) Total phenolic content, antioxidant activity and toxicity of aqueous extracts from selected Greek medicinal and aromatic plants. Industrial Crops and Products. 53(2014):46–54.
4. Nefeli Sofia Sotiropoulou et al (2016) Determination of  $\alpha$ - and  $\beta$ -thujone in wormwood and sage infusions of Greek flora and estimation of their average toxicity Curr Res Nutr. 4. 152-160. DOI: 10.12944/CRNFSJ.4.

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### Notes: