HP-46: The improvement solubility of propolis extract/cyclodextrins inclusion complex

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Subject description: Propolis is a resinous, gummy, sticky substance made by bees from various parts of the plant (bark, leaves, buds...), then mixed with wax, pollen and their enzymatic secretions. It has numerous biological activities against inflammatory, cardiovascular, digestive, cancer and oxidative diseases... to protect its bioactive compounds and improve their bioavailability, it is necessary to encapsulate them with different vectors.

Objectives: The aim of this work is to determine the chemical composition of propolis from the Melbou-Bejaia region, using two extraction methods: agitation and ultrasound, by spectrophotometric assay and the phase solubility diagram was studied.

Methods: Polyphenol content was determined spectrophotometrically, using the colorimetric Folin-Ciocalteu method. Condensed tannin content was determined using the vanillin method, which forms a red complex with flavonoids and the antioxidant activity of propolis extract is assessed using the DPPH free radical, by a phase solubility diagram with alpha and β-cyclodextrin.

Results and discussion: The results of tannins are expressed in mg catechin/g propolis dry extract, ranging from 71 to 406 mg CA/g. Total polyphenols are expressed in terms of gallic acid equivalent and range from 335 to 490 mg GA/g of dry extract.

Conclusion: In this study, we determined the phenolic compound of propolis extract from the Melbou region, and assessed its antioxidant effect using the solubility diagram.

Keywords: propolis extract, phenolics compound, antioxidant activity, solubility diagram.