



PURIFICATION OF CITRUS POLYPHENOLS WITH ANTIBACTERIAL ACTIVITY

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Introduction. In food industry, antimicrobial agents are used for preserving the quality and safety of processed food. Polyphenols found in citrus as *C. aurantifolia*, *C. sinensis*, *C. paradisi*, *C. reticulata* y *C. limetta* extracts inhibit cell growth of a large group of infectious microorganisms [1], (i.e. yeast, *E. coli*, *Salmonella*, *Staphylococcus aureus*), thus, these compounds are useful as antibacterial agents. Hesperetin, hesperidin, luteolin, naringenin, naringin, narirutin, neohesperidin, nobiletin and tangeretin are some of the group of polyphenols called flavonoids, found in several of the citrus fruits.

Methods. *C. reticulata* and *C. limetta* species were chosen due to scarce found data about flavonoid extraction from these two species. Maceration with methanol as solvent in ultrasonic bath will be carried out [2]. The following test will be applied:

- Total phenol determination by Folin-Ciocalteu method [3].
- Total flavonoid cuantification by diethilen glycol method [4].
- Phenolic and flavonoids identification by UV luminescence [5].

Flavonoids will be purified by ionic resin column adsorption. Liquid chromatography will be used for flavonoid content in purified extracts. Antibacterial activity determination by inhibition halo technique will be carried out [6].

Results. Results are expected to show a significative presence of flavonoids in the obtained extracts. The ratio of used solvent and obtained purified flavonoid will be determined. Antibacterial effect will be shown and the minimum inhibitory concentration will be determined.

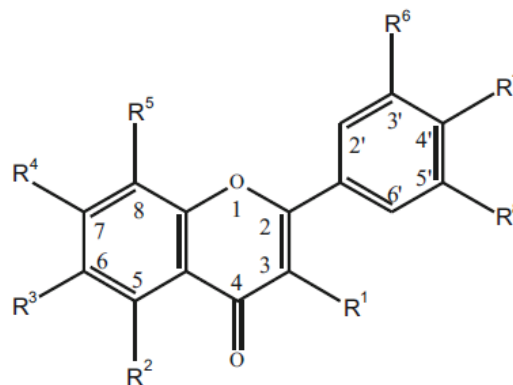


Fig.1 Flavonoids general structure.

Conclusions. Citrus fruits show important content of polyphenols. Flavonoids purified from *C. reticulata* and *C. limetta* show antibacterial effect and their minimum inhibitory concentrations are established.

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