

**DETERMINATION OF NARINGIN AND HESPERIDIN  
IN CITRUS FRUIT BY HIGH-PERFORMANCE  
LIQUID CHROMATOGRAPHY. THE ANTIOXIDANT  
POTENTIAL OF CITRUS FRUIT**

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**SUMMARY**

Naringin and hesperidin in dimethyl sulfoxide extracts of citrus fruit (oranges, red and blond grapefruit, and sweeties – a hybrid of pummelo and blond grapefruit) have been analyzed by high-performance liquid chromatography with a mobile phase prepared from 2% aqueous acetic acid and acetonitrile. The detection wavelength was at 285 nm. Antioxidant assays based on hydrogen atom-transfer reactions (oxygen radical absorbance capacity, ORAC) and on electron transfer (total phenols by use of Folin-Ciocalteu reagent, FCR; trolox-equivalent antioxidant capacity, TEAC; ferric ion-reducing antioxidant power, FRAP; and reaction with 1,1'-diphenyl-2-picrylhydrazyl, DPPH) were used to compare the antioxidant potential of citrus fruit and their main flavonoids. The three antioxidant assays (FRAP, TEAC, and DPPH) were performed with prolonged duration of the assay time, because all fruit extracts require long reaction times to approach the end point in the scavenging reaction. Lipophilic and hydrophilic fractions from citrus fruit were investigated by the ORAC reaction. Relationships between the main flavonoids, total polyphenols, and antio-