

DETERMINATION OF **HESPERIDIN** AND **NARINGIN** IN JUICES USING CAPEL®-105M CAPILLARY ELECTROPHORESIS SYSTEM

LUMEX Method M 04-67 (2010)

INTRODUCTION

The method is intended for determination of hesperidin and naringin using capillary electrophoresis technique in order to reveal adulteration of juices. These components are tested in citrus juices, concentrated juices, nectars, juice-containing beverages, and fruit sauces that are produced primarily from oranges, grapefruits, tangerines, lemons, and limes.

MEASUREMENT METHOD

The method is based on dilution of a drink, its subsequent separation, and quantitative determination of the components by capillary electrophoresis.

The components are detected by their intrinsic absorption at a wavelength of 220 nm.

MEASUREMENT RANGE

The measured weight concentrations of the components determined in samples lie in the range **20 – 2000 mg/l**.

EQUIPMENT AND REAGENTS

The following equipment and reagents are used in the measurements:

- CAPEL®-105M capillary electrophoresis system with the high-voltage positive polarity;
- special cassette with capillary (I.D. 50 µm, total length 75 cm);
- naringin;
- hesperidin;
- rectified ethyl alcohol;
- sodium tetraborate, reagent grade;
- sodium hydroxide, reagent grade;
- hydrochloric acid, reagent grade.

Data acquisition, processing and output are performed using a personal computer running under WINDOWS® 2000/XP operating system with installed dedicated software for data acquisition and processing.

EXAMPLES OF REAL ANALYSES

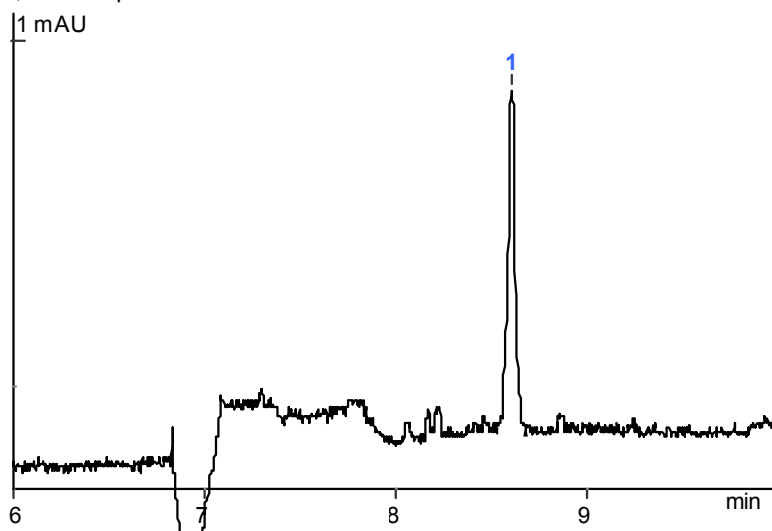
SEPARATION CONDITIONS:

Buffer:	borate
Capillary:	$L_{\text{eff}}/L_{\text{tot}}$ 65/75 cm, I.D. 50 µm
Sample injection:	150 mbar*s
Voltage:	+25 kV
Temperature:	+20°C
Detection:	220 nm

Sample: grapefruit juice

Measurement result:

1 – naringin (780 mg/l)



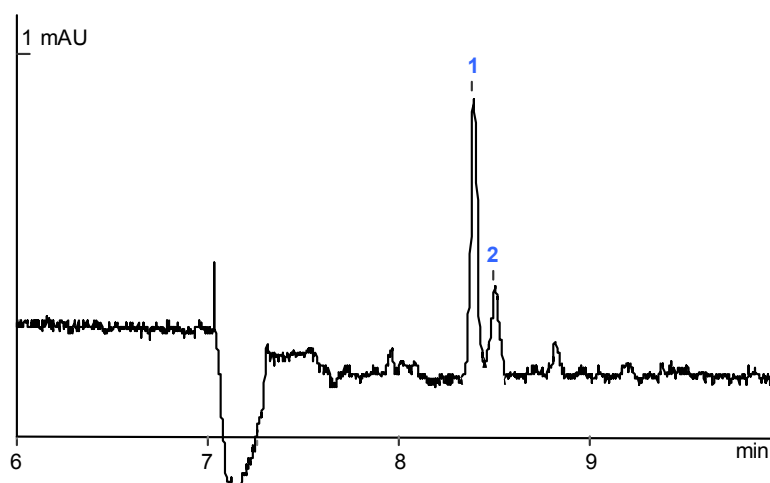


Sample: tangerine juice

Measurement result:

1 – hesperidin (380 mg/l)

2 – component of the
sample



The contents of this paper are subject to change without notice.

The information in this leaflet is supplemental. To get more specific information on this method, please contact the developer of this method Lumex Instruments Ltd.

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