



INSTITUTO DE BIOLOGÍA AGRÍCOLA
DE MENDOZA, ARGENTINA

DISTRIBUTION OF SOLUBLE CARBOHYDRATES IN GRAPEVINE TISSUES DEPENDING ON THE LIFE CYCLE – DETERMINATION BY CAPILLARY ELECTROPHORESIS

Instrument

Capillary electrophoresis system Capel 105-M

Industry

Agriculture

Company

Instituto de Biología Agrícola de Mendoza

Region

Latin America

The distribution of soluble carbohydrates affects fruit yield and quality and depends on plant physiology. Thus, sugar analysis in plants is important throughout the entire growth process. Lumex Instruments offered the Institute of Agricultural Biology of Mendoza the Capillary Electrophoresis method for determination of sugars in different tissues and phenology, with minimal sample preparation.

The challenge

The researchers from the Institute of Agricultural Biology of Mendoza needed to determine grapevine sugars on different phenological grown stages. The samples included mature and young leaves, berries, and roots.

The solution

For this task, Lumex Instruments offered the Capillary electrophoresis (CE) method for the determination of the mass concentration of sugar. It is based on their migration in a quartz capillary and the subsequent separation resulting from their different electrophoretic mobility under the influence of an applied electric field. The method was implemented on CE system [Capel-105M](#) using the kit for determination of [sugars](#) in alcoholic and non-alcoholic beverages. Despite the differences in sample types, after some minor modification the kit could analyze a complicated sample such as plant tissues. Thus, it demonstrated its flexibility and great capabilities of CE method applications.

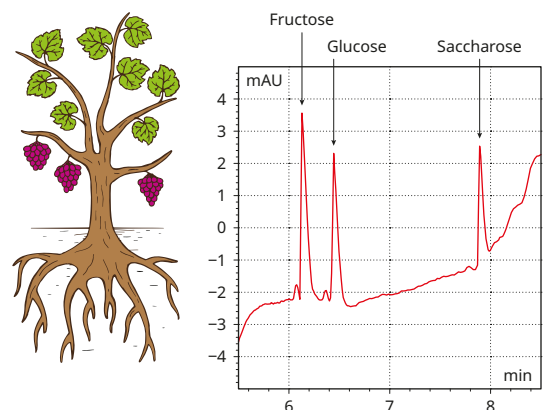
The results

The CE method has proved to be a powerful separation technique with almost no sample preparation, even with complex plant tissues, that can provide accuracy and precision in analysis utilizing high-resolution efficiency. The sugar analysis chemical kit, which was initially developed by Lumex Instruments for the analysis of beverages, has demonstrated its high flexibility and possibility of use for much more complex samples.

Based on the study, the scientists published a scientific article in *Plant Physiology and Biochemistry*. As they have concluded, capillary electrophoresis proved to be a robust, low cost, and versatile method for the analysis of underivatized carbohydrates in different grapevine extracts

With some slight modifications, the method is also applicable for the determination of these sugars in solid samples (jams, honey, etc.).

Read the full article at [Plant Physiology and Biochemistry](#), 118 (2017), 394–399



For more information, please contact us

@ info@lumexinstruments.com

🌐 www.lumexinstruments.com