

LEC (LABORATOIRE EXPERTISES ET CONSEILS)
LABORATORY, FRANCE



CAPILLARY ELECTROPHORESIS INTRODUCED TO THE ANALYSIS OF WINE AND SPIRITS

Instrument

Capillary electrophoresis system Capel 105-M

Industry

Wine and spirits

Company

LEC (Laboratoire Expertises et Conseils) laboratory

Region

Europe

One of the leading spirit production control companies in France, LEC successfully uses capillary electrophoresis (CE) for the determination of various compounds in wine and spirits with CE system Capel-105M, and managed to replace some conventional techniques.

The challenge

Founded in 1994, the LEC laboratory is internationally recognized for its analysis and technical expertise in the areas of barrel making and spirits. The company performs about 3 thousand analyses of wines, wine materials, and spirits per year and has COFRAC accreditation. Among the methods traditionally used in the laboratory were titration and enzymatic method for organic acids, HPLC for aromatic aldehydes, AAS for metals and cations in spirits, and others, each for a particular analysis. Many of these methods have disadvantages such as lower sensitivity, expensive reagents and consumables, and they are cost and time consuming compared to CE. The number of samples in the laboratory could reach hundreds per day only for the analysis of organic acids, which took a lot of time.

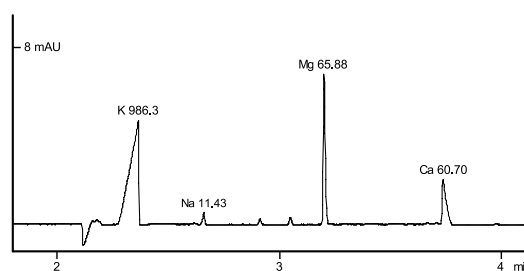
The solution

Lumex Instruments presented a new method for the laboratory. CE system [Capel-105M](#) was the perfect solution for such company because it managed to perform many standard wine and spirits analyses just in one instrument and it did so significantly more accurately compared to other conventional techniques.

LEC started to use CE method for the determination of [organic acids](#). The kit for analysis of organic acids in wine and wine material developed by Lumex Instrument has advantages over other commonly applied methods, such as titration or enzymatic method. One of the most significant is the ability to determine the entire range of organic acids in one run using one sample.

From the end of 2018, LEC switched from atomic absorption (AA) spectrometry to CE to quantify iron (II) and copper. Capel-105M has several important benefits over the AA spectrometer used by the company before: simple sample preparation, fast and accurate analysis, and no need for a specific calibration for each element.

In addition to that, LEC determines [sugars](#) (fructose, glucose, and sucrose) and [inorganic cations](#) in wine and spirits by capillary electrophoresis using Lumex Instruments kits for analysis.



Inorganic cations in French red wine

The results

The LEC company purchased its first CE system Capel-105M in 2011. Today it uses two CE systems by Lumex Instruments.

The company characterizes Capel-105M as the most cost-effective, user-friendly, and reliable solution to solve its analytical tasks in oenology. CE features that LEC considers vital for its work are accuracy and versatility. Capillary electrophoresis proved to be a powerful technique to analyze the diversity of [wine and brandy](#) compounds. All this has reduced the maintenance cost for LEC since it decreased the number of instruments used for its analyses.

For more information, please contact us

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