CAPILLARY ELECTROPHORESIS
WITH TANDEM MASS SPECTROMETRY

AGILENT TECHNOGIES – CE 7100 WITH TRIPLE QUAD MS 6460

Capillary electrophoresis hyphenated with electrospray ionization and triple quad mass spectrometry (CE-ESI-MS/MS) is a powerful and efficient analytical tool for the analysis of ions (both of inorganic and organic) as well as non-charged compounds. Electrospray ionization is suitable for the ionization of low-molecular compounds (pharmaceuticals, metabolites, environmental samples etc.) and for a wide range of biomolecules. The technique is successfully usable for the analysis of various compounds in complex sample matrices. CE-ESI-MS/MS combines the short analysis time, high separation efficiency of CE with the structural information from the triple quad MS detector.
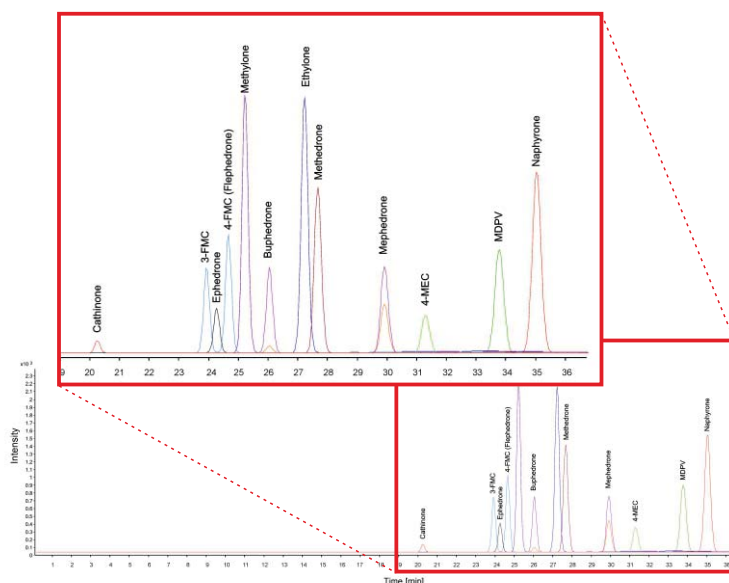
ACQUIRED INFORMATION

> Determination and structural identification/elucidation of both low and high molecular compounds
> Separation and identification of metabolites in body fluids
> Separation and identification of enantiomers
> Separation and identification of inorganic ions and low-molecular organic ions with high sensitivity
> Separation and identification of drugs of abuse and newly emerging designer drugs of forensic interest

SAMPLE TYPES

> Biological fluids (urine, serum, blood, liquor, saliva)
> Pharmaceutical samples (API, excipients, impurities)
> Environmental samples (water, soil)
> Other liquids and solutions

MODES, CONDITIONS AND PRECISION

> Pressure and electrokinetic mode of sample injection
> ESI-MS nebulizer operating at ground potential makes CE separation conditions independent from MS operation conditions
> ESI sprayer voltage from -3.5 kV to 4.5 kV
> Sheath liquid ESI-MS interface for connection of CE with MS
> Smallest sample volumes – only a few μL in total, with injection of nL volumes
> Various electrophoretic modes of separation – based on mobility, pI values, size or hydrophobicity

Separation of abused "designer" cathinones using CE-ESI-MS/MS.

DETAILED INFORMATION ON REQUEST

REGIONAL CENTRE OF ADVANCED TECHNOLOGIES AND MATERIALS

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