



## **Coupling of Capillary Electrophoresis with Mass Spectrometry: Principles and Applications**

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In the postgenomic age the study of the proteome is a key task for the development of new drugs. The complexity of the proteome which can contain thousands of proteins demands for analytical tools with high resolving power for low amounts of analytes in complex matrices. The combination of capillary electrophoresis (CE) with electrospray mass spectrometry (ESI-MS) for bioanalytical and pharmacokinetic tasks is becoming increasingly popular due to its intrinsic advantages:

CE offers high theoretical plate numbers. Mass spectrometry (MS) on the other hand provides high sensitivity with a very high selectivity allowing for unambiguous identification and structure elucidation of analyte molecules. The separation power of an on-line CE/MS system is thereby twofold: CE separates the analytes by their charge-to-size ratio while MS subsequently differentiates the analytes by their mass-to-charge ratio.

At least three types of on-line interfaces have since been described: the liquid junction, the co-axial sheath and the sheathless interface, each with its specific advantages and limitations.

This presentation will concentrate on the properties and details of the different CE/MS interfaces. Further, it will demonstrate some applications of CE/MS in the field of bioanalytics and drug analysis.