Capillary Electrophoresis Methods For Pharmaceutical Analysis

The basic set-up and detection methods used for MEKC are the same as those used in CE. The difference is that the solution contains a surfactant at a concentration that is greater than the critical micelle concentration (CMC). Above this concentration, surfactant monomers are in equilibrium with micelles.

Capillary electrophoresis–mass spectrometry

Capillary electrophoresis–mass spectrometry (CE–MS) is an analytical chemistry technique formed by the combination of the liquid separation process of

Capillary electrophoresis–mass spectrometry (CE–MS) is an analytical chemistry technique formed by the combination of the liquid separation process of capillary electrophoresis with mass spectrometry. CE–MS combines advantages of both CE and MS to provide high separation efficiency and molecular mass information in a single analysis. It has high resolving power and sensitivity, requires minimal volume (several nanoliters) and can analyze at high speed. Ions are typically formed by electrospray ionization, but they can also be formed by matrix-assisted laser desorption/ionization or other ionization techniques. It has applications in basic research in proteomics and quantitative analysis of biomolecules as well as in clinical medicine.

Affinity electrophoresis

may be obtained through affinity electrophoresis. Cross electrophoresis, the first affinity electrophoresis method, was created by Nakamura et al. Enzyme-substrate

Affinity electrophoresis is a general name for many analytical methods used in biochemistry and biotechnology. Both qualitative and quantitative information may be obtained through affinity electrophoresis. Cross electrophoresis, the first affinity electrophoresis method, was created by Nakamura et al. Enzyme-substrate complexes have been detected using cross electrophoresis. The methods include the so-called electrophoretic mobility shift assay, charge shift electrophoresis and affinity capillary electrophoresis. The methods are based on changes in the electrophoretic pattern of molecules (mainly macromolecules) through biospecific interaction or complex formation. The interaction or binding of a molecule, charged or uncharged, will normally change the electrophoretic properties of a molecule...

Micellar electrokinetic chromatography

technique used in analytical chemistry. It is a modification of capillary electrophoresis (CE), extending its functionality to neutral analytes, where the

Micellar electrokinetic chromatography (MEKC) is a chromatography technique used in analytical chemistry. It is a modification of capillary electrophoresis (CE), extending its functionality to neutral analytes, where the samples are separated by differential partitioning between micelles (pseudo-stationary phase) and a surrounding aqueous buffer solution (mobile phase).

Since its introduction in 1987, new developments and applications...

David Goodall (chemist)

methods based on capillary electrophoresis, real time visualisation of separations and reactions, imaging dissolution of pharmaceutical dosage forms, and

David M. Goodall was a British chemist. He was Emeritus Professor of chemistry affiliated with the University of York (UK). Throughout his career he made a considerable impact on the field of analytical chemistry.

Chiral analysis

Innovations in Pharmaceutical Technology, (magazine), 19-23, December, 2010 Chankvetadze, Bezhan (1997). Capillary electrophoresis in chiral analysis. Chichester:

Chiral analysis refers to the quantification of component enantiomers of racemic drug substances or pharmaceutical compounds. Other synonyms commonly used include enantiomer analysis, enantiomeric analysis, and enantioselective analysis. Chiral analysis includes all analytical procedures focused on the characterization of the properties of chiral drugs. Chiral analysis is usually performed with chiral separation methods where the enantiomers are separated on an analytical scale and simultaneously assayed for each enantiomer.

Susan M. Lunte

separation-based sensors for monitoring pharmaceuticals in roaming animals. She has studied combined capillary electrophoresis with microdialysis to create

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In most applications, MEKC is performed in open capillaries under alkaline conditions to generate a strong electroosmotic...

Many compounds of biological and pharmacological interest are chiral. Pharmacodynamic, pharmacokinetic, and toxicological properties of the enantiomers of racemic chiral drugs has expanded significantly and become a key issue for both the pharmaceutical industry and regulatory...

Analytical chemistry

analysis uses mass or volume changes to quantify amount. Instrumental methods may be used to separate samples using chromatography, electrophoresis or

Analytical chemistry studies and uses instruments and methods to separate, identify, and quantify matter. In practice, separation, identification or quantification may constitute the entire analysis or be combined with another method. Separation isolates analytes. Qualitative analysis identifies analytes, while quantitative analysis determines the numerical amount or concentration.

Capillary electrophoresis

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Capillary electrophoresis (CE) is a family of electrokinetic separation methods performed in submillimeter diameter capillaries and in micro- and nanofluidic channels. Very often, CE refers to capillary zone electrophoresis (CZE), but other electrophoretic techniques including

capillary gel electrophoresis (CGE), capillary isoelectric focusing (CIEF), capillary isotachophoresis and micellar electrokinetic chromatography (MEKC) belong also to this class of methods. In CE methods, analytes migrate through electrolyte solutions under the influence of an electric field. Analytes can be separated according to ionic mobility and/or partitioning into an alternate phase via non-covalent interactions. Additionally, analytes may be concentrated or "focused" by means of gradients in conductivity and pH...

Coral Barbas

PMID 10722066. Galli, Verónica; Barbas, Coral (2004-04-02). "Capillary electrophoresis for the analysis of short-chain organic acids in coffee". Journal of Chromatography

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Electroextraction

detection, analysis time, and selectivity. The use of EE-CE has made capillary electrophoresis more applicable to use in the pharmaceutical industry. The

Electroextraction (EE) is a sample enrichment technique that focuses charged analytes from a large volume of one phase into a small volume of aqueous phase through the application of an electric current. The technique was originally developed as a separation technique for chemical engineering, but has since been coupled to capillary electrophoresis and liquid chromatography–mass spectrometry as a means of improving limits of detection, analysis time, and selectivity. The use of EE-CE has made capillary electrophoresis more applicable to use in the pharmaceutical industry.

Analytical chemistry consists of classical, wet chemical methods and modern analytical techniques. Classical qualitative methods use separations such as precipitation, extraction, and distillation. Identification may be based on differences in color, odor, melting point, boiling point, solubility, radioactivity or reactivity. Classical quantitative analysis uses mass or volume changes to quantify amount. Instrumental...