

Capillary Electrophoresis Of Carbohydrates

[DOWNLOAD HERE](#)

1;Preface;6 2;Contents;10 3;Contributors;12 4;Chapter 1: Analysis of Simple Carbohydrates by Capillary Electrophoresis and Capillary Electrophoresis Mass Spectrometry;16 4.1;1.1 Introduction;17 4.2;1.2 Determination of Simple Carbohydrates by CE;17 4.2.1;1.2.1 Detection Systems in CE;24 4.2.1.1;1.2.1.1 Spectrophotometric Detection for the Determination of Underivatized Carbohydrates by CE;24 4.2.1.2;1.2.1.2 Electrochemical Detection for the Determination of Carbohydrates by CE;27 4.2.1.3;1.2.1.3 Other Detection Methods for the Determination of Carbohydrates by CE;29 4.2.2;1.2.2 Electrolyte Systems for the CE-Separation of Simple Carbohydrates;30 4.2.3;1.2.3 Analysis of Simple Carbohydrates in Real Samples by CE;32 4.3;References;32 5;Chapter 2: Fluorophores and Chromophores for the Separation of Carbohydrates by Capillary Electrophoresis;37 5.1;2.1 Introduction;38 5.2;2.2 Reductive Amination;40 5.3;2.3 Amination Via Formation of Glycosylamine;53 5.4;2.4 Derivatization with N-Methyl-glycamine Derivatives;53 5.5;2.5 Formation of Hydrazones;55 5.6;2.6 Derivatization with Pyrazolone Compounds;56 5.7;2.7 Derivatization at Carboxylic Acid Functionalities;58 5.8;2.8 On-Column Derivatization;59 5.9;2.9 Conclusion and Future Directions;61 5.10;References;61 6;Chapter 3: Capillary Electrophoresis of Bacterial (Lipo)Polysaccharides;66 6.1;3.1 Introduction;68 6.2;3.2 Capillary Electrophoresis of Lipopolysaccharides;69 6.2.1;3.2.1 On-Gel Hydrolysis and CE-LIF Monosaccharide Composition of Excised Lipopolysaccharides;71 6.2.2;3.2.2 CE Chips for Screening of Endotoxin Chemotypes from Whole-Cell Lysates;72 6.2.3;3.2.3 Capillary Zone Electrophoresis (CZE) Separation of O-Deacylated LPS and Polysaccharide Derivatives;74 6.2.4;3.2.4 CE for Quantitative Analysis of Extracted Lipopolysaccharides;75 6.2.5;3.2.5 CZE for the Determination of Meningococcal Polysaccharides;75 6.2.6;3.2.6 CE to Monitor Lipopolysaccharides (Endotoxins) by Protein Complexation;78 6.2.7;3.2.7 CE of Alginic Acid;80 6.2.8;3.2.8 Characterization of Lipopolysaccharides by CE-MS;82 6.2.8.1;3.2.8.1 Characterization of Intact LPS from the *H. influenzae* by Electrophoresis-Assisted Open-Tubular Liquid Chromatography-MS;82 6.2.8.2;3.2.8.2 Carbohydrate Analysis of Typical and Atypical Isolates of *A. salmonicida* for the LPS-Based Classification;83 6.2.8.3;3.2.8.3 CE and High-Field Asymmetric Waveform Ion Mobility Spectrometry MS for the Analysis of

LPS;84 6.2.8.4;3.2.8.4 Glycotyping by CE-MS of *Pseudomonas aeruginosa* Isolates from Patients with Cystic Fibrosis;85 6.2.8.5;3.2.8.5 Characterization of Short-Chain LPS Glycoforms by CE-MS;86 6.2.8.6;3.2.8.6 Isomer Separation and Characterization by CE-MS;86 6.2.8.7;3.2.8.7 In-Source Fragmentation Strategy for Polysaccharide Analysis;87 6.3;3.3 CE Analysis of Bacterial Glycosaminoglycan-Like Polysaccharides;87 6.3.1;3.3.1 General Considerations;87 6.3.2;3.3.2 CE Analysis of *E. coli* K4 Polysaccharide;88 6.3.3;3.3.3 CE Analysis of *E. coli* K5 Polysaccharide (Heparosan);90 6.4;3.4 Conclusion;91 6.5;References;92 7;Chapter 4: Capillary Electrophoresis and Its Microchip Format for the Analysis of Glycosaminoglycans;96 7.1;4.1 Introduction;97 7.2;4.2 CE Analysis of GAGs;99 7.2.1;4.2.1 Analysis of Hyaluronic Acid and Its Oligosaccharides;99 7.2.2;4.2.2 Analysis of Sulfated GAGs;101 7.2.2.1;4.2.2.1 Intact Sulfated GAGs;101 7.2.2.2;4.2.2.2 Unsaturated Disaccharides;103 7.3;4.3 Microchip Electrophoresis of GAGs;104 7.3.1;4.3.1 Analysis of Di- and Oligosaccharides;106 7.3.2;4.3.2 Analysis of GAG Polysaccharides;109 7.4;4.4 Conclusion;112 7.5;References;113 8;Chapter 5: Extracellular Polysaccharides in Microbial Biofilm and Their Influence on the Electrophoretic Properties of Microbial Cells;117 8.1;5.1 Biofilm: The Mode of Bacterial Life;118 8.1.1;5.1.1 Extracellular Polymeric Matrix;118 8.1.2;5.1.2 Extracellular Polysaccharide Matrix in Staphylococci;119 8.1.3;5.1.3 Extracellular Matrix i EAN/ISBN : 9781607618751 Publisher(s): Springer, Berlin, Springer Science & Business Media Format: ePub/PDF Author(s): Volpi, Nicola

[DOWNLOAD HERE](#)

Similar manuals: