METHODS IN MOLECULAR BIOLOGY™ • 213
Series Editor: *John M. Walker*

Capillary Electrophoresis of Carbohydrates

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Recent developments in high-resolution separation techniques based on capillary-scale chromatography and electrophoresis have transformed the analysis of free and conjugated mono- and oligosaccharides. In *Capillary Electrophoresis of Carbohydrates,* hands-on experts describe cutting-edge techniques in capillary electrophoresis (CE) for the analysis of complex carbohydrates. Written in step-by-step detail to ensure successful experimental results, these readily reproducible protocols provide methods for sample preparation and analysis of mono- and oligosaccharides, glycoproteins, and glycoconjugates. Different CE separation formats, including capillary zone electrophoresis (CZE), capillary isoelectric focusing (CIEF), capillary isotachophoresis (CITP), capillary gel electrophoresis (CGE), and micellar electrokinetic chromatography (MEKC), are presented for different types of applications, such as the analysis of glycoforms, the separation of enantiomers, and the resolution of oligosaccharides. The separation of native derivatized carbohydrates is presented using UV, fluorescence, and mass spectrometric detection. Two other applications demonstrate the use of CE as an assay method for monitoring glycosyltransferase activity and for determining the association constant of carbohydrate–protein interaction. A useful appendix describes the structures of the most commonly encountered carbohydrate residues and oligosaccharides from mammalian and bacterial origins. Each protocol contains detailed information on reagents, apparatus, and valuable comments and notes on methods.

Timely and highly practical, *Capillary Electrophoresis of Carbohydrates* provides both novice and experienced CE analysts with powerful tools for the successful separation of complex carbohydrates by capillary electrophoresis.

FEATURES

- **Cutting-edge techniques for using capillary electrophoresis (CE) to analyze complex carbohydrates**
- **Valuable comments and notes on reagents, apparatus, and experimental protocols**
- **Analysis of carbohydrates using different separation formats: CZE, CIEF, CITP, CGE, and MEKC**
- **Appendix of the most commonly encountered carbohydrate residues and oligosaccharides**

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ISBN 0-89603-826-2

Methods in Molecular Biology™ • 213
CAPILLARY ELECTROPHORESIS OF CARBOHYDRATES
ISBN: 0-89603-826-2
E-ISBN: 1-59259-294-5 humanapress.com