

INDEX

A

- Acylcarnitines 140–143,
146, 147, 149–152, 158, 160, 161
- Adeno-associated virus (AAV) protein..... 263–268
- Affinity chromatography
 - affinity cartridge 59
 - affinity cartridge packing 59
- α 1-Acid glycoprotein (AGP) 25–38, 41–55
- Amino acids
 - Asn297 78
 - branched-chain 15–23, 153
 - 5-methylcytosine 213, 214, 217
- 8-Aminopyrene-1,3,6-trisulfonic acid (APTS)
 - labeling 87, 89, 236–238, 242, 248
- Analyte concentrator 63
- Antibody
 - antibody immobilization 58, 195
- Aptamer 58, 251–258
- Auto-antibody detection 122

B

- Background electrolyte (BGE)..... 17–21,
23, 58–61, 63, 64, 67–69, 71, 73, 97, 98,
101–104, 106, 107, 129, 130, 132, 144, 145,
147, 149, 150, 159–161, 167, 169, 222–226,
229–232
- Binding analysis 112
- Bioanalyzer 36
- Biomarker
 - cancer 221
 - glycan 77, 236
- Branched-chain amino acids 15–23, 153

C

- Cancer biomarker..... 221
- Capillary
 - activation 17, 61, 97, 101
 - conditioning 67, 149, 150, 222, 225, 226
 - cutter 17, 69, 98, 103, 143
 - fused silica capillary 17, 33,
37, 46, 54, 61–65, 69, 98, 103, 110, 113, 115,
116, 119, 129, 141, 143, 150, 157, 159, 168,
217, 224, 265
 - window making 157

Capillary electrophoresis

- basic principles 5, 7
 - calibration 19
 - capillary zone electrophoresis (CZE)..... 214, 222
 - clinical applications 4, 7
 - history 4
 - μ CE 20
 - SDS capillary gel electrophoresis
(SDS CGE) 36, 263–268
 - Capillary electrophoresis systems
 - ABI 3130xl genetic analyzer 203,
237, 241, 248, 249
 - Agilent 7100 21, 107, 143
 - Beckman P/ACE MDQ 44, 46, 129
 - Beckman P/A800 Plus 265
 - FIDAlyzer 111
 - laboratory built 195
 - Microlyne 189
 - Sheathless CESI 8000 168
 - Capillary modification 42
 - Carbohydrate electrophoresis 235–250
 - Carcinoembryonic antigen (CEA) 251–258
 - CE-ESI-MS 149
 - Cell
 - culture 95, 96, 98
 - incubation 95–107
 - CE-MS coupling 139–161
 - Chemokines 185, 188, 191–196
 - Chip gel electrophoresis 26, 36
 - Clinical chemistry v, 7, 186
 - Clinical proteomics v
 - Clinical samples 7–10, 18,
95–98, 100–103, 107
 - Contactless conductivity detector
(CE-C4D) 15, 95–107
 - Cystic fibrosis (CF) 142
 - Cytokines 25, 185, 186, 188, 191–196
- ## D
- Data analysis
 - with GeneMapper software 203, 205, 236, 241
 - Deglycosylation 25–38, 236, 242
 - Diagnosis
 - point-of-care diagnostics 175
 - Diode-array detector 129, 214, 224

- Dissociation constant 112, 119–121
DNA analysis 79
DNA sequencer-assisted fluorophore-assisted
carbohydrate electrophoresis
(DSA-FACE) 235–250
Donepezil 127, 132
Dried blood spots
collection 148, 149
extraction 148, 149
- E**
- Electrokinetic injection 6, 43, 72, 161, 264
Electropherogram 19–21, 23,
35, 47, 49–51, 53, 79, 88, 89, 98, 100, 101, 104,
106, 107, 131, 132, 150, 152, 153, 159, 170,
192, 194, 201, 203, 205–209, 217, 225, 226,
241, 248, 249, 256–258, 267
Electrophoretic injection 41–55
Electrospray ionization 139, 144, 146
Elution buffer 187, 192, 193, 196
Enantiomers 127, 128, 131, 132
- F**
- Field-amplified sample stacking (FASS) 264, 267
Flow-induced dispersion analysis (FIDA) 109–122
Fluconazole (FLU) 127, 128, 130, 132–135
Fluorescein 5-isothiocyanate (FITC) 176, 180, 183
Fluorescence detection 29, 43
Fragile X-associated primary ovarian insufficiency
(FXPOI) 199
Fragile X-associated tremor/ataxia syndrome
(FXTAS) 199
Fragile X mental retardation 1 (FMR1) 199–208
Fragile X syndrome (FXS) 199
Fused silica 17, 33, 37, 46,
54, 61–65, 69, 98, 103, 110, 113, 115, 116, 119,
129, 141, 143, 150, 157, 159, 168, 217, 224, 265
- G**
- Gel electrophoresis 3–5, 26,
36, 200, 201, 263–268
Glucose 7, 83, 87, 89,
90, 95–107, 141, 242, 248
Glycoforms 41–55, 235, 243, 246
Glycomics 244, 246
Glycoprotein 25–38, 41–55,
77, 79, 221, 222, 238, 242, 243, 245
Guthrie cards 142, 144, 148, 188
- H**
- Head-column field-amplified sample stacking
(HC FASS) 264, 267
Highly-sulphated α , γ -cyclodextrins (CDs) 128
High resolution 72, 79, 144, 160, 222
History of capillary electrophoresis 4
Hjerten, S. 5
Hot embossing 176, 179, 183
Human plasma 15–23, 44, 118, 166
Hydrodynamic injection 6, 19, 43,
51, 70, 144, 150, 160, 161, 217, 264
- I**
- Immunoaffinity
capillary electrophoresis 43, 57–73, 185–196
extraction 43, 57–73, 186
Immunoaffinity capillary electrophoresis
antibody immobilization 58
elution buffer 196
extraction cartridge 62, 64
extraction disk 190–192, 195, 196
Immunoglobulin G (IgG) 77–89
Immunoglobulin purification 83, 84
Immunosubtraction 62–65, 192, 196
Inborn errors of metabolism (IEM) 139–161
Inflammation 26, 77, 78, 185, 189, 194
Injection
electrokinetic injection 6, 43, 72, 161, 264
electrophoretic injection 48, 49
head-column field-amplified sample stacking 267
hydrodynamic injection 6, 19,
43, 51, 70, 144, 150, 160, 161, 217, 264
multiplexed injection 141, 147, 150, 152, 155
sample stacking 16, 21, 57, 263–268
short end injection 127–136
Internal standard (IS) 17, 51,
82, 97, 101, 146, 149, 150, 153, 159, 168
Isoform separation 110, 222, 226
- L**
- Lab-on-a-chip 25–39, 175–198, 251–259
Lactate 95–107
Laser induced fluorescence (LIF) v, 6,
25–38, 43, 82, 119, 141, 186, 264
Ligand binding assays 109, 110
- M**
- Magnetic beads (MBs) 59–61, 67, 70, 252, 255
Mass spectrometer
ABI Voyager DE PRO MS 31
Agilent 6550 quadrupole time-of-flight MS 143
Agilent 6230 time-of-flight MS 143
Mass spectrometry
CE-MS 57–73, 139–161, 165–171
IA-SPE-CE-MS 59, 60, 65–68, 70, 73
MSI-CE-MS 142, 144,
148–150, 152–155, 157, 159–161

- Metabolic profiling.....149, 165–171
 Metabolites79, 95, 96,
 141–150, 152, 153, 155–161, 165–170
 Metabolomicsv, 7, 145, 148, 158, 165–167
 Methylamidation79, 89
 Microcartridge..... 58, 59, 62–64, 69, 71–73
 Microchip
 capillary electrophoresis..... 175, 252
 conditioning 34
 electrophoresis.....25, 175–184, 251–258
 gel electrophoresis..... 26, 33, 34, 36
 microdevice fabrication..... 175–184
 microlyne borofloat glass chip..... 189
 power supply 27
 SU-8 microchips 25–38
 Microdialysis95, 96, 107
 Microfabrication176
 Microfluidics175, 179,
 189, 235, 253, 256
 Molecular identification of virus strain 263–270
 Molecular interactions 117–119
 Moving boundary electrophoresis 4
- N**
- Newborn infants 185, 186, 188
 Newborn screening..... 139–161
 N-glycan analysis 81, 82, 84–86,
 88, 236–238, 240, 241, 244, 249
 N-glycosylation79, 239, 244, 246, 249
 Nucleic acids..... v, 3, 5, 251
- P**
- Pathogen detection 263–268
 PCR
 T-PCR..... 199–208
 Photolithography 26, 253
 Plasma
 human..... 15–23, 44, 118, 166, 222
 Poly(ethylene glycol)176
 Polymer matrix36
 Poly(methyl methacrylate) (PMMA)
 device fabrication 182
 Preconcentration57, 60, 63,
 73, 142, 144, 150, 157, 160
 Preparation of antibody fragments58, 67
 Pressure-assisted analysis..... 16, 18, 19
 Prostate specific antigen (PSA) 221–233
 Proteins
 protein-antibody interaction78
 protein profiling 235–250
 protein-protein interaction 110
 proteoform59, 221, 222
 Purification 26, 31, 43, 79,
 82–84, 86, 87, 90, 209, 222, 236
- R**
- Repeat expansion 200, 201, 209
- S**
- Samples
 biomass-limited 165–171
 preparation44, 47,
 50, 79, 87, 88, 113, 119, 148, 149, 171, 216,
 222, 224, 225, 266
 Sample stacking16, 21, 57, 263–268
 SDS capillary gel electrophoresis (SDS CGE)..... 36,
 263–268
 Serum4, 5, 7–9, 30,
 42–44, 46–48, 50–52, 54, 57–73, 78, 83, 109,
 110, 113, 121, 168, 185, 222, 251, 253, 256–258
 Sheathless-CE..... 168
 Sheathless interface 157, 166
 Sheath liquid..... 60, 61,
 64, 67, 69–71, 141, 143–145, 149–151, 157,
 159–161, 166
 Solid-phase extraction (SPE).....57–73, 149
 Statistical analysis 145
 SU-8 microchips 25
 Sweat collection..... 144
- T**
- Taylor dispersion analysis (TDA) 110
 Time-of-flight mass spectrometer (TOF MS)..... 157
 Tiselius, A. 4, 5
 Transthyretin (TTR) 7, 57–73
 Treatment of biological samples 97
 Triplet-repeat primed PCR (TP-PCR) 199–208
- U**
- Urine7, 9, 236, 244, 247, 249
 UV-vis detector 6, 96, 110, 224
- V**
- Virus identification 263–268
- Z**
- Zone electrophoresis..... 4