

SUBJECT INDEX

A

Alzheimer's disease 77, 82
 Anaphase 12, 66, 70, 73, 102–103, 113, 116,
 216, 218, 280, 283
 Anesthetization of eggs 109
 Antibody 4, 67, 72, 93, 106, 109–111, 113,
 129–130, 132–133, 140, 144–145, 147, 153, 158,
 232, 252, 254, 256, 263, 268–270
 Aphidicolin 3, 11, 13–18, 72, 87–89, 101–105,
 107–108, 114–116, 118, 133–135, 139, 141, 146,
 152, 203–208, 228, 245
 Apoptosis 89, 92–93, 151, 156, 245, 251, 263,
 265–267, 281
 Astrocytes 76–82

B

Bacillus subtilis 18, 163–170
 Back pressure 28, 34, 42
 Biomarker 125, 263, 266–267, 272
 Bistability 278, 287
 Block and release 179–182, 184, 189, 196
 Bovine kidney epithelial cell 126
 BrdU incorporation 129–132, 259
 Bubble formation 42
 Budding yeast 5, 18, 173–175, 178, 278–287, 289
 Butyrate 13–14, 18, 125–135

C

cAMP 112, 212–213, 215–216, 218–221
 Camptothecin 104, 107
 Cancer 8, 12–13, 16, 47–62, 67, 76
 CD64 Expression 263–264, 268–269
 Cell counting 79, 252–253, 262
 Cell cycle 1–5, 9–18, 25–28, 33–34, 48, 51,
 65–67, 72–73, 75–77, 79–82, 85–89, 92, 97–98,
 101, 103, 113, 125–135, 137–148, 151–153, 155,
 158, 160, 163, 165, 169, 174–175, 177–182, 184,
 186, 188–189, 192–196, 198, 201–203, 205–206,
 209, 221, 227–228, 232–234, 239–246, 250, 259,
 277–290
 Cell density 4, 27, 60–61, 177, 184, 255, 258
 Cell division 10–11, 15–16,
 65, 75, 82, 97, 102–104, 114, 126, 133–135, 169,
 179, 182, 184, 193, 196, 227, 232–233, 245, 251,
 255–257, 278–279, 281–283, 289
 Cell loss 43, 93
 Cell purity 254
 Cell selection 4, 182–189
 Cell separation 10–16, 27–28, 33, 38

Cell transfection 18
 Centrifugal elutriation 4–6, 16, 25–44, 66, 86, 152,
 182–189, 196, 198
 Checkpoints 12, 68–69, 151–153, 280–282, 286
 Chromosome formation 97–118
 Chromosomal separation 103
 Computational modeling 278
 Coriolis jetting effect 44
 Counterstreaming centrifugation 4–5, 26
 Cross leakage 41
 C-value 8–9, 33, 39, 44
 Cyclin 15, 72, 87, 98, 111, 113, 152, 158–159,
 161, 201, 212, 281–283, 285–286
 Cyclin-dependent kinases 15, 152, 201,
 281–282, 286
 Cytofluorometer 53, 55, 60

D

Damaged cells 43
 Density gradient 4, 39, 43, 86, 202, 252, 264
 Diploid cells 48, 50–51, 193
 DNA analysis 6, 259
 DNA double-strand breaks 87
 DNA content 2–4, 9, 11, 30–31, 33, 38–40,
 48–52, 55, 86, 88, 91, 93, 127–132, 134, 153, 157,
 159, 177–179, 181–182, 206, 234, 241, 279–280
 DNA isolation 33
 DNA labeling 204–205, 207–208
 DNA repair 14
 DNA replication 1–3, 11–12, 14–18, 85–94,
 99–105, 113–114, 138, 152, 165, 202–203, 241,
 278–283
 DNA staining 6, 204, 207, 230
 DNA synthesis 2–3, 11–14, 16–17,
 39, 80–82, 100–105, 110–111, 116, 126, 129–131,
 133, 135, 152, 164–165, 167–169, 233, 237, 241,
 244–245, 281, 286
 DNA topoisomerase 104–105
 Double thymidine block 11, 13, 152–153, 155–156
 Dysfunction 262–267

E

Elutriation 4–6, 16, 25–44, 66, 86, 152, 182–189,
 191, 196–198
 Endospore formation 163
 Engraftment 249–259
 Enucleation 241–243, 246
 5-ethynyl-2'-deoxyuridine staining 230
 Expansion 201, 249–259, 266
 Expression analysis 256–257

F

Fertilization 97–117, 211, 213, 241, 244
 Flow cytometry 2, 6–9, 13–14, 31–33, 53, 57, 82, 85–94, 126–130, 132–134, 153, 157–160, 177–178, 186, 197–198, 204–208, 230, 233–235, 250, 252–256, 259, 261–273, 288
 Flow harness 35–36, 42
 Fluorescence microscopy 62, 72, 109, 230–231, 233, 235–236, 288
 Fractionation 4–10, 26–28, 32, 143, 147–148, 184, 186, 197–198

G

Giardia 202–203, 205–208
 Glioma 77–79, 81–82
 G₁/S boundary 135, 234

H

Haematopoietic stem cell 249–259
 HeLa cells 61, 66–67, 86, 104, 145–146, 151–161
 Hoechst 33342 dye 7, 9, 49–52, 54–56, 58, 60, 86, 221
 Hydroxyurea 3, 11–13, 16–17, 72, 87, 89, 152, 176, 179, 181–182, 191, 196, 203, 228–229, 232–233, 235–237, 281
 Hysteresis 278, 285

I

Immunoblotting 112–113, 153, 159–160
 Immunostaining 127, 139–140
 Inducers of DNA synthesis 104
 Inhibitors of DNA replication 12, 85–94
 Intensive care unit 262
In vitro maturation 211–221

K

Karyogamy 99–101, 110, 116–118

L

Large scale synchronization 68–70
 Lyophilized spores 165–166, 169

M

Malaria 202
 Manometer 28, 42
Medicago sativa 227–237
 Meiosis 48, 97–101, 103–104, 113–114, 118, 174, 198, 212–213, 216–221, 241
 Metaphase 4, 12, 57, 66, 69–71, 73, 97–99, 101–104, 113–116, 212, 216, 218, 229, 241, 246, 280, 286
 Metaphase promoting factor (MPF) 98–102, 114–117, 212–213, 216, 219, 241
 Microinjection 109–110
 Micromanipulation 242–243
 Mitotic cell 10–11, 65–74, 86, 97, 101, 104, 114, 135, 153, 156, 160, 192, 227
 Mitotic index 10, 230–231, 233, 235–236

Molecular network 277–290
 Monocyte 263–264, 269–270, 273

N

Nocodazole 3–4, 15, 50–51, 54, 58, 60, 68–69, 71–73, 86, 126, 135, 138, 141, 145, 152–154, 156, 176, 179, 181–182, 191, 196, 203
 Nuclear DNA 14, 33
 Nutrient depletion 180

O

Oncogenesis 48, 82
 Oocyte 48, 97–108, 113–114, 116–118, 211–221, 239–241, 243–244, 246
 Oscillation 42, 219, 278

P

p53 48
 Parasite 16, 201–203
 Particle size 30, 35, 234
 Pellet formation 38, 42–43
 Permeabilization 18, 89
 Prometaphase 66, 68–71, 73, 113, 153
 Protein analysis 142–144, 233
 Protein extraction 139–140, 194
 Protein transfer 139
 Protozoan 201–209
 Pulse-labeling 132, 141

R

Reprogramming 239–241, 244–245
 Resolution 2, 5, 26, 28, 30, 33, 38–39, 43–44, 103, 129, 131, 197, 250
 Rotor speed 30, 33–34, 36, 38, 42

S

SDS-PAGE 111–112, 139–140, 142–144, 147, 159
 Seal inspection 41
 Selection 4–5, 10, 16–17, 54–58, 62, 174, 182, 184, 198, 220–221
 Sepsis 262–263, 265, 272
 Serum deprivation 14–16, 75–82, 126, 135, 245
 Serum starvation 11, 13–16, 86, 152, 244–245
 Somatic cell nuclear transfer 239–246
 Sorting 4–10, 27, 50, 52, 55, 62, 86, 127, 252, 255–256
 Spectrophotometry 7
 Sperm penetration 98, 100–102, 107, 110, 116–118, 212
 Spinner cultures 69–71
 Spore germination 163–170
 Spore outgrowth 164, 167, 169
 Staining 6, 9, 31, 48, 50–51, 54–57, 60–61, 71–73, 80, 86, 88, 90–91, 108, 127, 129–131, 153, 157, 159, 177–178, 191, 193, 204, 207, 216, 218, 229–231, 233–236, 251–252, 254–258, 265–268, 272–273
 Stroboscope 28–29, 34–38, 41, 191
 Synchronization of cells 2, 15, 68–70, 141, 281
 Synchronization of nuclei 38–39
 Systems biology 278, 287

T

Teleost 97–118
 Telophase 66, 69–70, 73, 113, 116, 216, 218, 280
 Temperature-sensitive mutant 179, 281–282
 Tetraploid cells 9, 47–53, 55
 Time-lapse microscopy 153, 156, 159, 161
 T lymphocytes 264–266
 Transfection 9, 18, 54, 56–57, 61–62, 146, 148
 Transition stage 163–165
 Triple flask 67–69
 Tubing 28, 34–35, 41–42, 184–185, 191, 197

U

Ubiquitin conjugation 140, 144–147
 Uracil-DNA glycosylase 137–148

V

Vector 54, 58, 140, 144–146, 148
 Vegetative cells 163–164, 167, 203
 Velocity sedimentation 4–5, 26
 Verification of synchronization 40

W

Western blotting 73, 139–140
 Whole culture synchronization 4, 204–206

Z

Zygote 99, 101–105, 116–117, 239, 244