

INDEX

A

ABCB1.....143, 262, 268, 271, 273, 274, 276
 ABCG2..... 92, 104, 129, 143,
 262, 263, 268, 273, 274
 Acute myeloid leukemia (AML)21–34, 162, 218
 AMPK/snf1 kinase..... 37
 Anchorage-independent growth..... 151–159
 Anesthetic(s) 4, 10, 15, 61, 113,
 165, 168, 172, 181, 182

B

BALB/c-nu/nu strain..... 9
 Basal cell carcinoma.....218, 221, 229
 Basement membrane 7, 175
 β III tubulin..... 49, 197, 198, 236, 241
 Bioactive..... 250
 Bioluminescence imaging..... 10–18
 Bmi-1 39, 162
 BMP2..... 218
 BMP4..... 218
 Brain tumor cells 75
 Brain tumors (BT).....37–54, 73–82, 85,
 196, 233, 238, 249–258
 Brain tumor stem cells (BTSC).....37–54, 73–82, 238

C

Calipers 10, 15
 Cancer cell niche151, 217, 218
 Carboxylesterase 250
 CD24.....88, 162, 163, 167–169, 171, 172
 CD44.....88, 92–94, 102, 103, 120, 121, 129,
 131, 133, 134, 140, 152, 162, 163, 167–169, 171,
 172, 176–178, 183–186, 188–192, 263, 275, 277
 CD133..... 42, 52, 57–70, 88, 92,
 94, 129, 133, 140, 143, 146, 152, 197, 198
 Cell culture(s) 8, 10, 16, 23, 40–47, 58,
 74, 76, 77, 81, 93–94, 145, 153, 156, 180, 196–197,
 199, 218–219, 234–235, 245, 252, 258
 Cell cycle analysis..... 50–51
 Cell death assay 41, 50
 Cell migration 75
 Cell proliferation assay 41, 50
 Clonogenic assay 108, 239
 Clonogenic potential 238–240
 CpG island(s)..... 204, 208, 211, 213, 214

Cytomegalvirus (CMV) promoter250, 252, 255
 Cytosine deaminase..... 250

D

Danio rerio.....1
 Dendritic cells (DC)..... 233–246
 Differentiation.....8, 38, 43, 46, 48, 49, 53,
 57, 96, 140, 142, 171, 176, 199, 230, 231, 238, 240
 Dissecting microscope 10, 75–77, 79, 95,
 109, 112, 152, 155
 D-Luciferin 10
 DNA methylation 203–215
 DNA methyltransferases (DNMTs)..... 203

E

Engraftment3, 4, 22–24,
 26–33, 172, 191, 218
 Epithelial specific antigen (ESA)99, 162,
 164, 167–169, 171, 172
 Epithelial tumors..... 261
 Extracellular matrix 7, 62, 70, 151, 218, 252

F

Firefly luciferase reporter gene 15
 Flow cytometry..... 24, 42, 50–52, 67,
 134, 144, 163–165, 167, 168, 176–179, 183–184,
 236, 242–243, 245, 268, 269
 Fluorescence-activated cell sorting (FACS)..... 10,
 23–26, 29–32, 51, 52, 58, 60, 65, 67–68, 70, 94,
 101–104, 111, 135, 140, 142, 144–146, 164, 178,
 183–185, 192, 241, 254

G

Gene therapy 249–258
 GFAP 42–45, 49, 52, 78, 197, 198, 214, 236, 241
 GL261 glioma cell(s)..... 234, 243
 Glioblastoma multiforme (GBM)40, 52, 73,
 75, 78–80, 233, 234, 237, 238
 Gremlin 1218, 228, 229

H

Head and neck squamous cell carcinomas
 (HNSCC)..... 176, 180, 185, 186, 188–191
 Ho33342. *See* Hoechst 33342

Hoechst..... 33342, 103, 105,
 140, 142–144, 179, 191, 262, 263, 265, 267, 268,
 270–274, 276, 277
 Hoechst side population technique 139–146
 HSV-TK..... 250
 Human organotypic cultures 79

I

Immunocompromised 1, 8, 176, 177, 181, 191
 Immunoprecipitation.....204, 205, 212
 Interleukin-12 250
 Intracardiac injection 9, 10, 13–15, 17
 Intravasation..... 7
 Irradiation.....2, 4, 24, 27, 31, 34, 117, 245

K

KC transplantation 117–118, 121, 123, 124, 128
 Ketamine 10, 11, 13, 16, 61, 68,
 95, 111, 112, 163, 165, 168, 177, 181

L

Lateral tail vein injection 9
 Lentiviral transduction 250
 Lentivirus 250, 251, 253–254
 Leukemia propagating cell (LPC)..... 25, 27–29
 Leukemias 26
 Leukemia stem cells 21–34
 Limiting-dilution (transplantation)
 assays 2, 22, 25, 28, 30, 32, 111

M

Magnetic cell sorting (MACS)..... 58, 60,
 65–68, 94, 98, 101, 103, 111
 Mammary fat pad (MFP) injections..... 11
 Mammary gland 8, 9, 11, 152
 Maternal embryonic leucine zipper kinase
 (MELK) 39, 40, 45, 47, 51, 52
 Matrigel..... 95, 109–112, 120–122, 129,
 131, 132, 136, 164, 165, 168, 169, 177, 182, 192
 Metastasis 7–18, 120
 Methylated DNA immunoprecipitation
 (mDIP)..... 203–215
 5-Methyl-cytosine 204
 Microarray(s) 39, 40, 205–206, 208,
 210–211, 213, 224, 230
 Microarray hybridization 208
 Microenvironment..... 7, 88, 123, 151,
 162, 217, 218, 224
 Multiple drug resistance (MDR)..... 261–277
 Multiplicity of infection (MOI) 250, 254, 255, 257
 Murine xenograft models 21
 Mycoplasma 9

N

NCr-nu/nu strain 9
 Nestin 41, 44, 49, 78, 197–199, 236, 241
 Neural stem cells (NSC).....37–54, 64,
 65, 74, 199, 234, 239, 249–258
 Neurosphere(s) 38, 39, 42–44, 46, 48,
 49, 51–53, 73–82, 152, 196–199, 235, 238–241, 245
 Neurosphere assay38, 42, 51, 74
 Neurosphere culture(s)38–39, 42–43,
 45–46, 48, 53, 73–82
 Niche 88, 151, 162, 217–231
 NOD/SCID22–24, 29–32,
 34, 85, 99, 110–112, 120–122, 125, 129–132, 136,
 161–165, 167–169, 172, 183, 263
 NOD/SL-IC 22, 30–32

O

Organotypic brain cortex migration assay 73
 Orthotopic..... 8, 9, 68, 168, 250

P

Pancreatic adenocarcinoma.....161, 162, 165
 Pancreatic cancer stem cells 161–171
 Phosphatase and tensin homolog (PTEN)..... 39, 40
 Pituitary adenomas 195–201
 P13K/Akt pathway..... 39
 Platelet-derived growth factor (PDGF) 39, 101
 Pro-drug converting enzymes..... 250
 Proliferation..... 2, 39–43, 46, 48–50,
 54, 64, 106, 140, 157, 238, 239, 245
 Prostate cancer..... 85–136, 141, 143, 151–159
 Prostatic cancer stem/progenitor cells 139
 Prostatic stem/progenitor cells 139–146
 Prostosphere(s)152–154, 156–159

R

Rat urogenital sinus mesenchyme
 (rUGM) recombinants..... 116
 Rhodamine 123 (R123)262, 263,
 265, 267, 268, 270, 272, 274, 276
 RNA in situ hybridization.....218, 224–228
 RNA interference 47

S

S-100, 200
 Self-renewal..... 2, 8, 22, 31, 32,
 37–54, 74, 96, 139, 142, 152, 162, 218, 238
 Semiquantitative and quantitative
 RT-PCR..... 41
 Side population (SP)92, 94, 104,
 139–146, 262, 263, 270–274, 276, 277

Signaling pathway 39, 43, 162, 163, 263
 Sonic hedgehog (SHH)..... 162, 164
 Sphere-formation assays..... 95, 108–110
 Squamous cell carcinomas (SCC)..... 175–193

T

TRAIL 250
 Transduction of cells..... 251
 Transfection..... 41, 45–50, 53, 250, 253–255
 Transient transfection..... 41, 46–47
 Transplantable models 8
 Transplantation..... 1–4, 10, 29–32, 60–61,
 117, 120–125, 128, 186, 237, 250, 252, 257, 258
 TR/KC assays.....114, 118, 123
 Tropism 8
 Trypsin–EDTA 10, 75, 77, 93, 96,
 142, 204, 206, 222, 229, 256–258

Tumor fibroblast..... 218, 224
 Tumor stroma.....176, 188, 190

V

VEGF 39
 Viral constructs..... 252

X

Xenogen IVIS imaging systems..... 15–16
 Xenograft(s).....7–18, 92, 95, 97–99, 101, 107–109,
 111, 118, 129, 131, 134, 162, 164–167, 172
 Xenotransplantation 1–4, 96
 Xylazine10, 11, 13, 16, 61, 68, 95,
 111, 112, 163, 165, 168, 177, 181

Z

Zebrafish. *See Danio rerio*