

INDEX

A

A20..... 329, 336
A₄₅₀..... 276, 279
A₆₀₀..... 275
ABI PRISM 7700 system 200, 204
Acepromazine..... 216, 220
Acetonitrile..... 157, 158, 161–163
ACK Lysing buffer..... 359
Active AKT..... 234, 240–241
Adeno-associated viruses (AAVs)..... 320, 321
Adenoviruses 46, 51–53, 55, 56, 320
Agarose gel 74, 112, 115–117, 184, 251, 252, 294, 344, 354, 410, 413, 428
Agarose NEEO 286
Akt 1..... 244, 247, 255–262
AKT-Ser⁴⁷³ phosphorylation 236
Albino..... 4
Alexa Fluor 546 C5 maleimide 273, 275, 277, 278
Alexa Fluor 546 fluorophore
(TatU1A-Alexa) 272
Alexa546-labeled TatU1A
(TatU1A-Alexa) 273–276, 278
Aliphatic amines..... 249
Alkylated phosphoramidites 159
Allele-specific RNAi (ASP-RNAi)..... 67, 71, 77
Alpha herpesvirus Varicella 51
Alternative splicing..... 81–91, 96
A549 lung epithelial cell line 399, 403
Amyotrophic lateral sclerosis
(ALS) 214, 320, 321
Anchorage dependent..... 260
Anhydrous acetonitrile 157
Anhydrous dichloromethane
(aDCM) 246, 249, 250, 265, 266
Anion-exchange chromatography..... 164
Annexin V-FITC 248, 259–260
Annexin-V-Fluos..... 427
Annexin-V staining 431
Anthocyanin 4
Anti-ERK2 antibodies 301
Anti-GAPDH antibodies 301, 307
Antigenomic podo 56
Antigen-presenting cells (APCs) 328, 357, 373
Antiproliferative 43, 50
Antisense oligonucleotides (AO).... 138, 155, 174, 316, 342
Apex..... 391, 395

Apoptosis..... 10, 28, 38, 47, 48, 50,
56, 200, 257, 259–260, 268, 318, 330, 332, 342,
344, 352–353, 424, 431

Arabidopsis thaliana 13, 14
Arginine-glycine-aspartic acid..... 220
Argonaute 2 (Ago2) 7, 11, 36–38, 155
Arthropod-borne viruses 10
Astrocytes 318
Athymic nude mice 286, 294, 432
Atropine 402, 414
Autoradiography..... 39, 125, 130, 294
Autosomal recessive disorder 114
Avanti Polar Lipids (Alabaster, AL) 175

B

B2..... 11, 13
BACH-1 50
Bak..... 332
BALB/c mice 175, 186, 369,
377, 400, 402, 418
BamHI 44, 343, 344, 346
Bam HI-A region rightward
transcript (BART) 44–48
Bam HI fragment H rightward open
readingframe 1 (BHRF1) 44, 48
Basic Local Alignment Search Tool
(BLAST) 89, 102, 103, 149, 212, 225, 434
Bax..... 332
Bcl-2 49, 332
BCLX (BCL2L1) gene 88–91
Bcl-xL (NM_138578) 89–91
Bcl-xS (NM_001191) 89–91
Beckman Coulter DU800
spectrophotometer 176, 178
Beta-actin 113, 118, 235,
237, 411, 425, 426, 428, 430, 433
Betadine antiseptic solution..... 191, 193
Betaherpesvirus 48
Bicinchoninic acid 300
Bijoux bottles..... 248
Biocompatibility 284, 287, 292
Biodegradable..... 215, 225, 243–268
Biodistribution 190, 286–287, 292–294
Biogenesis..... 14, 36–38, 40, 53, 54, 93
Bioinformatic analyses..... 101
Biomarkers 39

- Bio-Rad Econo chromatography column..... 176, 180
Bipolar electrodes 318
Bisaminophosphine 161
Bis-(N,N-diisopropylamino)-2-cyanoethoxyphosphine (P2).....157, 160–162
BK virus (BKV)..... 51, 52
Blood-neural barrier (BNB) 317, 320
Blood-retinal barrier 318
Blotting buffer 426
Blunt-end siRNAs 22, 27
BMDC181–183, 185
Bombyx mori71
Boranophosphate modification 316
Bovine serum albumin (BSA).....182, 232, 274, 276, 300–302, 399, 400, 402, 405, 408, 409, 414, 418
Branched 10 kD PEI F25-LMW 284, 287
Bright Line-Haemocytometer..... 300
Brilliant SYBR Green QPCR
 Master Mix177, 360, 364
Bromophenol blue 112, 125, 128, 233, 300, 343
Budker 189
Buprenorphine.....193
Burkitt's lymphoma (BL) 44, 45
- C**
- C3..... 342, 344, 346–349, 351, 353
C5a.....344, 346–347
Caenorhabditis elegans..... 5, 6, 9, 11–13, 314
Calcein-AM200, 205–208
Cary Eclipse mass spectrofluorometer..... 176, 180
Caspase 3..... 342–344, 346–349, 351, 353
Caspase 8.....200, 205, 206, 344, 346–347, 353
Castleman's disease 49
Cationic nanoparticle 219–220
Cationic polymers..... 216, 219, 220, 226, 267, 435
CCL17 331, 336
CCL22 331, 336
CD4+58, 326, 328–332
CD8+ 48, 326, 328, 330–332
CD40.....46, 177, 181–183, 185, 357, 360, 364
CD80.....182, 358, 365, 374
CD86.....182, 357, 358, 360, 364, 365, 374–377
CD11C..... 357
CD86 costimulatory molecule 374
CD1 mice 342
cDNA..... 14, 23, 29, 31, 113, 177, 184, 291, 347–349, 360, 363, 409–413
CD40 siRNA immunoliposomes
 (CD40 siILs) 185
Cell microarrays..... 198
Cell-penetrating peptides (CPPs) 272, 274
CEM cells124, 127, 131, 133
Centri-Sep..... 273, 275
Certificate of Analysis (COA)..... 417
Chalcone synthase 4
Chemiluminescence..... 225, 301
Chemokines..... 48, 331
Chinese hamster ovary (CHO)276, 277, 279, 280
Chitosan216, 219, 220, 408
Chlorhexidine solution..... 191, 193
Chloroform.....178, 179, 183, 187, 217, 223, 290, 347, 363, 412
Chloro-N,N-diisopropylamino-2-cyanoethoxyphosphine (P1) 161
Chloro phosphine 161
Choi's algorithm 82
Chromatin remodeling 55
Chromatography 110, 125, 157, 158, 161, 162, 164, 166, 176, 180, 234, 273, 275, 284, 286, 287, 293, 294, 301
ChsA..... 4
Cisterna magna..... 391
CL1-0..... A549, 232
CL-4B176, 178, 180
Complement..... 49, 342
Complement-binding protein 49
Complete Dulbecco's modified Eagle's medium
 (DMEM)..... 22, 28, 29, 69, 112, 116, 124, 198, 200–202, 206–208, 285, 346, 347, 375, 376, 399, 400, 402, 404–406, 416, 425
Complexation 284, 287–289, 292, 295, 317
Complexes 26, 36, 97, 116, 221, 226, 238, 251, 252, 254, 257, 267, 284–289, 291–294, 296, 315, 317, 335, 344, 362, 416
Confocal laser scanning microscopy
 (CLSM)..... 247, 257
Coomassie Brilliant Blue (CBB) 277
Copper grids..... 247, 253
Co-suppression..... 4, 12
Co-target mRNA 84, 88
CPP-conjugated 272
c-Rel..... 344, 358
CT26 colon cancer cells 334
CTLA-4.....333, 334, 373, 374
Cucumber mosaic virus strain (CMV-Y) 14
Cy-3..... 194
Cy-5..... 194
Cyclin D 49
Cyclodextrin polycations 216
Cy3-labeled 175, 179, 183, 185, 199, 203, 204, 208
Cytokine assay 419–420
Cytomegalovirus (CMV) 8–10, 40, 48–49, 247
Cytometer.....254, 255, 300, 303, 369, 370, 419
Cytometry177, 181, 182, 185, 247, 255, 260, 302, 364, 365, 376, 377
Cytopathic effects (CPE) 405, 407

Cytotoxicity200, 203–204,
215, 216, 219, 267, 284, 287, 289
Cytotoxic T lymphocyte-associated antigen 4
(CTLA-4)333, 334, 373, 374
Cytotoxic T lymphocytes (CTL)..... 52

D

700 Da 246
2000 Dalton polyethylene glycol
(PEG2000)..... 175, 179
Decapentaplegic homologue 3
(SMAD-3) 10, 333
DEDDh nuclease family 13
Deleterious genes..... 313
Dendrimers216, 219, 271
Dendritic cells (DCs).....24, 173–187,
327–332, 335–336
Dengue virus 10
Deoxy-nucleotide triphosphate (dNTP) 23, 29,
177, 184, 285, 291, 360, 410, 412, 413
Desilylation 158
Detritylation 158, 164
Dextran..... 199, 202, 203, 208, 400
Dialysis membrane246, 250, 266
1,2-Diaminocyclohexane-N,N,N',N'-
tetraacetic acid 286
Dicer..... 3, 6–8, 10, 13, 14, 36, 37, 53–56, 58,
59, 139, 155, 243, 315, 316, 326, 327, 358, 384, 385
Dicer-like (DCL) enzymes 14
Dicer substrate siRNA (DsiRNA).....384–385, 387–393
Dichloromethane (aDCM)(CH₂Cl₂)157, 158,
161, 162, 169, 246, 249, 265
4,5-Dicyanoimidazole (DCI)157, 161, 162
Diethylether 164
Diethylpyrocarbonate (DEPC)-H₂O158, 163,
165, 177, 183, 217, 222, 286, 291, 347, 359, 363,
400, 410, 412
Difco..... 112, 248
Diffuse large B-cell lymphomas (DLBCL)..... 48
DiGeorge syndrome critical region 8
(DGCR8)..... 36, 37
DIgR2. 330, 336
Dihydrofolate reductase..... 49
Dimethoxytrityl (DMTr)160, 162, 164
4,4'-Dimethoxytrityl (DMTr) group 160
Dimethyldioctadecylammonium bromide (DDAB)..... 175
Dimethyl sulfoxide (DMSO) 200, 232, 273, 431
2,4-Dinitro-1-fluorobenzene (DNFB).....375, 377, 379
Distearoylphosphatidylethanolamine-PEG²⁰⁰⁰
(DSPE-PEG²⁰⁰⁰) 175, 178
Dithiothreitol (DTT)..... 23, 177, 233, 300, 360
DL-Dithiothreitol 300
DMTr-On oligo 165
DNA polymerase.....49, 111, 113, 115–117, 401, 413

Dopaminergic neurons 320
Dorsal root ganglia (DRG) 391, 392
DOTAP23–26, 31, 408
DOTMA 408
Double stranded RNA (dsRNA).....3, 28, 93,
139–140, 155, 214, 243, 271, 314, 326–328, 358, 415
DPBS.367, 400, 407
DraIII site111, 115, 116
Driving pulse 318–319
Droscha 7, 36–37, 54, 58, 315, 326–327
Drosophila 6, 11–13, 36, 94, 319
Drosophila C virus (DCV) 11
Dual-Glo Luciferase Buffer 404
Dual luciferase assay 404
Ducks. 37

E

EBV. *See* Epstein-Barr virus
EBV-associated nuclear antigen 1
(EBNA1) 45
E. coli 112, 116, 275, 343, 345, 346, 431, 432
E. coli BL21(DE3)..... 275
EcoRI..... 115, 127, 427, 431
EDTA..... 68, 69, 112, 124, 125,
177, 178, 198, 201, 207, 232, 233, 246, 248, 258,
274, 285, 286, 293, 300, 399, 413
EF-TEM 253, 267
EGFP gene (pEGFP)110, 114–115,
247, 254, 255, 278
Ego-1..... 12
Electrophoresis74–75, 111–113,
119, 125, 128, 131, 166, 219, 233–234, 240, 251,
252, 294, 301, 304, 344, 402, 410, 413, 428, 429
Electrophysiology 319
Electroporation.....315, 317–320
ELISA 23, 24, 27, 125,
127, 132, 133, 248, 258, 292, 394, 416, 419
Encapsulation186, 190, 321
Endonuclease..... 7, 321
Endonucleotic cleavage 315
Endosome 271–272, 276, 284, 328
Energy-filtering transmission electron
microscopy (EF-TEM)..... 253, 267
Energy valley 99, 100
Enflurane..... 349
Enhanced chemiluminescent (ECL)234, 241,
242, 301, 306, 307, 426, 429
env gene..... 54
Episome..... 44
Epstein-Barr virus (EBV)8, 9, 44–48, 56
Epstein-Barr virus-encoded small RNAs
(EBERs) 56
ERI-1..... 13
ERK2 siRNA300, 306–307

Ethanol (EtOH).....29, 73, 75,
78, 112, 116, 128, 158, 163, 177, 183, 199, 200,
202, 217, 222, 223, 240, 247, 256, 290, 347, 352,
359, 361–363, 365, 400, 409, 412, 413, 427

Ethidium bromide (EtBr)74, 112,
113, 117, 184, 246, 251, 253, 267, 413

Ethidium homodimer-1 (Eth-D1)..... 200, 204

Eukaryotic initiation factor
2 α (eIF2 α).....53

Euthanasia V solution415

Exocyclic amino.....158, 160, 163

Exportin-5.....7, 36–37, 56, 315

Extinction coefficient 166, 167, 169, 178, 218

Extracellular transfection.....251, 314, 317

F

Fas..... 330, 344

Fas ligand (FasL)..... 330, 336

Fas-ligand inhibitory protein (FLIP) 49, 50

FASTA88, 89, 96, 144, 147, 148, 150

FastPrep.....400, 401, 409

Ferret..... 398, 402, 413–415, 420, 421

Fetal bovine serum (FBS).....22, 26, 69,
112, 116, 124, 176, 180, 182, 186, 198, 201, 206,
232, 233, 238, 247, 248, 254, 258, 260–262, 274,
300, 302, 303, 343, 346, 347, 359, 360, 362, 375,
376, 399, 400, 404–406, 416

Fetal calf serum (FCS)285, 288, 425, 429

Fibronectin199, 202, 207

Ficoll-Hypaque 402, 415

Ficoll-Paque 176, 185, 186, 360, 370

Ficoll-Paque Plus 22, 26

Ficoll-Paque solution..... 360, 366

Firefly luciferase (Luc).....115, 194, 434

FlexiPlate siRNA 198, 200

FL1-H channel 431

FLJ10540232–238, 242

Flock house virus (FHV) 11, 13

Flow activated cytometry sorting (FACS)..... 302

Flow cytometry.....177, 182–183,
247, 360, 364–365

Flp-In-CHO cell line..... 277

Flp-In-recombination system.....277

Fluor 546.....272–275, 277, 278

Fluorescein 375, 431

Fluorescence 39, 180, 203–205,
207, 255, 276, 277, 279, 280, 370, 431

Fluorescence microscope177, 182,
185, 199, 200, 203, 204, 274

Fluorochrome..... 303, 360, 368, 375–377

F-12 medium..... 274, 276

Formaldehyde255, 294, 360, 385

Functional genomics..... 81, 174, 299, 301

Fungi.....3, 4, 13, 285

G

β -Galactosidase (*lacZ*)68–72, 76–78, 194

Gammaherpesvirus..... 44, 49

[γ -³²P]ATP 286, 293

GAPDH29, 30, 114, 177,
185, 301, 306–307, 348–350, 360, 411

GC content 82, 85, 89, 97–99, 138, 141

Gene delivery244, 249, 330

Gene knockdown..... 137, 192, 200, 201,
204–206, 218, 283–296, 326, 334, 424, 430, 432

Gene knockout..... 358

GenePix 4200A..... 200, 207

GenePorter.....177, 181–182, 185

Gene silencing.....3–7, 11, 13–15, 38, 55, 67, 72,
78, 82, 89, 91, 93, 101, 109–121, 123, 137, 174,
175, 185, 211–227, 271, 272, 276, 278, 315, 316,
326–328, 334, 335, 349, 351, 357–370, 423–435

Gene targeting.....225, 286, 289, 292, 424, 427, 433

Gene transfection177, 346–347

Genome..... 4, 5, 9, 11–13, 40, 44, 48–57, 59,
83, 84, 89, 127, 214, 247, 315, 320, 335, 396, 428

Gentamicin solution 402, 414

Giemsa solution..... 239

GL2..... 284

GL3..... 284, 434

Global translational repression 214

Good laboratory practice (GLP) 248

GPCR. *See* G protein coupled receptors

G protein coupled receptors (GPCRs)49, 387, 388

Granulocyte/Macrophage colony-stimulating
factor (GM-CSF) 176, 180, 359, 362

Granzymes 342

Green fluorescent protein (GFP) 110, 194

Guanidinium thiocyanate..... 285, 290

Guanidinoethyl..... 157

GW182-containing bodies (GW-bodies)37

H

H1..... 110

H1299..... 232, 237

Habituation 388, 389

Hairpin RNA 3, 8, 52, 53, 57,
68, 110, 123, 127, 243, 271, 330, 398, 403, 431

Ham's F-12 medium..... 274, 276

HCV. *See* Hepatitis C virus

HEK293..... 124, 131, 236, 242

HeLa cells 59, 89, 116, 120, 198, 201–206, 208, 403

Helicase7, 8, 315

Hemacytometer..... 26, 28, 248, 259, 416

Hemagglutination assay.....405–407, 409

Hematopoietic cell differentiation..... 38

Hematopoietic cells 48, 260

Hematoxylin and eosin (H&E)..... 352–354

- Hemolysis..... 394
Heparin 26, 247, 252
Hepatitis..... 8, 56, 57
Hepatitis B virus (HBV) 57
Hepatitis C virus (HCV) 8–10, 57, 58
Hepatitis delta antigen (HDAg)..... 57
Hepatitis delta virus (HDV) 56, 57
HEPES-KOH..... 111, 168–169, 273, 374
Herpes simplex virus-1 (HSV-1)..... 9, 42–44
Herpes simplex virus thymidine kinase
(HSV-TK) 69, 70
Herpesviridae 40–51
Herpesvirus 40, 42, 44, 45, 48–51
Heteroduplexes..... 156
Hexanucleotides 285
HHV-7..... 51
Highly active antiretroviral therapy (HAART)..... 58
High performance liquid chromatography
(HPLC)..... 158, 163–169
Hind III..... 67
Hippocampus 318, 320
Histidine-lysine (HK) 317
Histone acetyltransferase..... 59
Histone deacetylase HDAC-1..... 55
HIV..... 124, 126, 321
HIV-1 encephalopathy (HIVE) 59
HIV-1 Tat peptide..... 272
[³H-labeled] thymidine (Amersham) 178, 186
HMGA2 gene 426–433
H-NMR..... 246, 250, 266
H5N1 pandemic..... 398
Hodgkin Reed-Sternberg tumors..... 333
Hodgkin's lymphoma (HL)..... 44
Homing mechanism 342
Homologous 4, 7, 52, 412
Homology 3–5, 10, 82, 103, 104, 219, 247
Horseradish peroxidase (HRP)..... 27, 114,
119, 132, 135, 225, 344, 354, 417, 426
HOSE cell line 428
Host-encoded miRNA 9, 15
Housekeeping gene 29, 291, 348, 350
HPLC buffer 158
HSV-2. *See* Human herpes virus type 2
Hsv1-miR-H1..... 42
HT1080..... 124
1H-tetrazole 161, 162
hTLR7 24, 32
hTLR8 24, 26, 32
Human Cu/Zn superoxide dismutase
(SOD1)..... 320, 321
Human cytomegalovirus (HCMV)..... 8, 41, 48–49, 56
Human endogenous retrovirus L (HERV-L)..... 55
Human hepatocellular carcinoma (HHC)..... 57
Human herpesvirus type 2 (HSV-2) 42–44
Human herpesvirus type 3 (HHV-3) 51
Human herpesvirus type 4 (HHV-4) 44
Human herpesvirus type 5 (HHV-5) 48
Human herpesvirus type 6 (HHV-6) 51
Human herpesvirus type 8 (HHV-8) 49
Human immunodeficiency virus type 1 (HIV-1) 8,
10, 39, 48, 54, 55, 58, 123–135, 272, 320
Human papillomavirus 329, 330, 332
Human papillomavirus type-16..... 329, 330, 332
Human PBMCs 24–27, 32
Human retrovirus 8
Human T cell leukemia/lymphoma virus
type 1 (HTLV-1)..... 54, 55
Human T98G cells..... 22, 28, 30
Human TLR8 22–25, 27, 31
Huntington's disease..... 214, 215, 321
Hybridoma 176, 178
Hydrodynamic..... 189–194
Hydrolytic 266, 267
2-Hydroxyethyl-1-piperazineethanesulfonic
acid (HEPES)..... 23, 176, 178, 179,
216, 218, 284, 399, 400, 426
Hygromycin B 274, 277
Hyperactivation 328
Hypervolemia 392
Hypochromicity..... 166
Hypothalamic nuclei 318
- I**
- ICP4..... 43, 44
ICP34.5 43, 44
IE72/IE1 suppression..... 49
I element..... 12
IFN- β 9, 58, 140
IFN- γ 329–331, 336
IFN-responding pathway 48
IKK ϵ 331
IL-2..... 419
IL-4..... 176, 180, 359
IL-6..... 49, 329, 332, 419
IL-7..... 329
IL-10..... 332, 419
IL-12..... 329, 332
IL-13..... 419
IL-15..... 329
IL-1 β 419
IL12 p40..... 419
IL12 p70..... 419
2-Iminoethiolane (Traut's reagent) 176
Immature DCs (imDC) 357, 370
Immediate-early protein IE72/IE1 48
Immune modulation 50, 172, 173
Immunogenicity 24, 215
Immunohistochemistry 185, 353–354

Immunohistology 318
 Immunoliposome 173, 175–176, 179, 180, 186
 Immunological complications 215
 Immunomodulation 48
 Immunorecognition 139
 Immunoregulatory 332, 357, 358, 374
 Immunoregulatory capacity 374
 Immunostimulation 22, 24, 32
 Immunostimulatory motifs 102–104
 Immunostimulatory RNAs (isRNAs) 102
 Immunosuppression 45, 373
 Indoleamine-2,3-dioxygenase (IDO) 329, 330, 336
 Infected-cell protein 0 (ICP0) 42–44
 Infectious mononucleosis 44
 Inferior vena 192, 351
 Influenza virus 397, 398, 403, 405, 413, 414
 Innate immunity 7, 21, 27, 418
In silico 24, 38, 144, 214
In situ 39, 293, 352
 Integral membrane protein 2A (ITM2A) 50
 Integrase 54
 Interferon (IFN) 7–9, 24, 28, 49,
 53, 58, 94, 102, 316, 318, 379, 417
 Interferon regulatory factor 49
 Interferon response 94, 109, 121, 140, 214
 Interferon responsive genes (IRG) 214
 Interphase 26, 227, 390, 412
 Intracerebroventricular Injection (ICVI) 220
 Intranasal 408–409, 413–415, 418, 420, 421
 Intraperitoneal (i.p.) injection 317, 349, 418, 424
 Intraportal 189, 192–194
 Intrathecal infusion 387
 In vacuo 162
 Invasion assay 233, 236, 239
 In vivo 5, 15, 24, 32, 37, 44, 55, 56,
 155, 174, 175, 185, 189, 190, 194, 211, 214–216,
 219, 220, 225, 249, 254, 283–296, 314–320,
 329–334, 343, 350, 351, 376, 377, 379, 383–395,
 398, 400, 402, 408, 418, 423–435
 IPTG 275
 IQ5 Multicolor i-cycler 29
 IRAK1 331
 Ischemia 341, 342, 344, 350–352, 355
 Ischemia reperfusion (I/R) injury 341, 342, 355
 Iscove's modified DMEM (IMDM) 285, 402, 415, 416
 Isoflurane 192–194, 286, 293, 295, 385, 388
 Isoform 82–84, 87–91, 96, 97
 Isopropanol 177, 183, 227, 290, 347, 359, 363, 412
 Isopropyl β-D-1-thiogalactopyranoside 273

J

Jamestown Canyon virus (JCV) 41, 51, 52, 55
 JetPEI 284, 287, 288, 292
 Jugular 192

K

Kanamycin 198, 201, 206, 273, 275, 427, 431
 Kaposin gene (K12) 50
 Kaposi sarcoma (KS) 8, 50, 399, 400, 402
 Kaposi sarcoma-associated herpes virus
 (KSHV) 8, 9, 41, 43, 49–51, 58
 KCl 23, 216, 234, 273, 285, 301, 401, 413, 426
 Ketamine 193, 216, 349, 386,
 390, 391, 400, 402, 408, 414, 418
 Ketamine/xylazine hydrochloride solution 400
 Ketamine/xylazine solution 193
 Keyhole limpet hemocyanin
 (KLH) 173, 185, 186, 316, 366, 368
 KH₂PO₄ 23, 216
 Kinases 236, 329
 Kinetochore 6
 KSHV genome 49, 50

L

Label IT Tracker™ CX-Rhodamine kit 247, 255
 lacZ 189, 194
 Latency 9, 10, 42, 44, 45, 50, 55, 58
 Latency-associated membrane
 protein 2a (LMP2A) 45
 Latency-associated nuclear antigen (LANA) 50
 Latency-associated transcript (LAT) 42–44, 50
 Latency I 45
 Latency II 45
 Latency III 45, 48
 Latent infection 40, 45, 47
 Latent membrane protein 1 (LMP1) 9, 46
 LB medium 73, 273, 275, 346
 L929 cell line 176, 182, 183, 342, 343, 346, 349
 LDH 296
 Lentivirus 50, 54, 320
 L-glutamine 343, 400
 Ligand 10, 49, 175, 190, 200–202, 330, 336, 374
 Light intensity 278
 Lipids. *See* Lipoplex
 Lipofectamine™ 233, 238, 247, 254, 255
 Lipofectamine™
 RNAiMAX 2000 399, 402, 403, 405
 Lipofectamine 2000 Transfection
 Reagent 69, 78, 199, 202, 203
 Lipoplex 175, 317, 392
 Liposomes 175, 178–183, 185,
 190, 220, 315, 317, 321, 408
 LMax II Luminometer 399
 Local free energy (ΔG_{loc}) 101
 Locked Nucleic Acid™ (LNA) 39, 156
 Long terminal repeat (LTR) 54, 55
 LSR II flow cytometer 300, 303
 Luciferase 50, 69–72, 77, 111, 189,
 194, 284, 286, 288–290, 295, 399, 403–405, 434

Luciferase assay286, 290, 295
 Luciferase quantitation kit 289
 Lumbar spinal cord..... 391, 392
 Luminometer..... 69, 289, 290, 399, 404
 Lymphocyte extravasation 342
 Lyophilized siRNA.....218, 374, 376
 Lysate.. 29, 72, 76, 94, 118, 120,
 183, 224, 236, 275, 290, 303–305, 347, 409, 420
 Lysosomes 284

M

Machinery 7, 8, 10, 11, 13, 114,
 214, 215, 244, 284, 335
 Macular degeneration..... 321
 Magnesium sulphate (MgSO₄)..... 157, 273
 MAP kinase..... 232
 Matrigel.....233, 235, 236, 239, 248, 261, 264
 Mature miRNAs37, 39, 40, 42, 43, 52, 126, 327
 MD5..... 8
 MDCK cells..... 399, 403, 405, 406
 Medium..... 22, 25, 26, 29, 31, 69,
 73, 75, 76, 78, 112, 116–118, 124, 131, 176,
 180–182, 185, 186, 198, 201–203, 206, 232, 233,
 238, 239, 247, 248, 254–265, 268, 273–277, 285,
 288–290, 300, 302, 303, 308, 343, 346, 347, 359,
 361, 362, 365–368, 370, 375, 376, 399, 400, 402,
 404–407, 415, 416, 425, 429
 MEK..... 232, 236
 Melanoma-differentiation-associated gene 5 8
 2-Mercaptoethanol..... 113, 176, 180,
 182, 295, 343, 359
 β-Mercaptoethanol (β-ME).....233, 273,
 277, 300, 301, 401
 Messenger RNA (mRNA)35, 36, 43,
 51, 94, 96, 314, 347, 424
 Metastasis..... 231, 244, 248, 255, 257, 261
 Methanol..... 114, 119, 161, 165, 167,
 200, 203, 205, 234, 239, 240, 263, 301, 306, 400, 426
 MgCl₂..... 68, 216, 273, 285, 401, 410, 412, 413
 MHC class II molecules..... 177, 182, 328, 358
 MHC class I molecules 328
 MHC-class-1-polypeptide-related
 sequence B (MICB).....10, 48, 49
 Microarray analysis..... 50, 232
 Microarray scanner 200
 Microcentrifuge..... 26, 118, 217, 224, 268
 Micro RNAs..... 6, 8
 Microtiter platens.....198, 199,
 201–204, 207, 208, 366, 367, 399, 416
 Millipore Ultra-centrifugal Devices (Millipore) (MWCO)
 of 100 kDa..... 175, 178, 180, 250, 266
 Minimum infectious dose 50 (MID50)..... 408, 414
 Mini-PROTEAN 3 Electrophoresis System 233
 Mini Trans-Blot cell system 301, 305

miR-1..... 9, 58
 miR-30..... 9, 58, 431
 miR-32 8–10
 miR-128 9, 58, 59
 miR-155 50, 58, 331, 336
 miR-196 9, 58
 miR-296 9, 58
 miR-351 9, 58
 miR-431 9, 58
 miR-448 9, 58
 miRBase 36
 miRDeep 40
 miR-I..... 44
 miR-LAT 9
 miR-N367 54
 miRNA seed..... 38
 MiRNeasy Easy mini kit 217
 miRNP 36, 37, 56, 315
 miR-TAR-3p..... 55
 miR-TAR-5p..... 55
 Mirtrons 36
 Mitochondrial enzyme complex I..... 56
 mivaRII-138 miRNA 53
 MLR..... 178, 186
 mM-EDTA solution (Nacalai Tesque)..... 198
 M-MuLV Reverse Transcriptase 285, 291
 Mn: 258..... 575, 246
 MnCl₂ (10% v/v) 175, 179
 Mn: 423 Da..... 246
 Mock..... 30, 54, 255, 257, 258, 430
 Mock control..... 31, 434
 Modified 2X Laemmli buffer 300, 304
 Molecular weight cut off
 (MWCO) 175, 178, 180, 250, 266
 Monkey SV40 virus..... 51
 Monophosphate 22, 28, 32
 3' Monophosphate 22, 28, 30
 MOPS (3-(N-morpholino) propanesulfonic acid 286
 MOPS buffer 286, 294
 Morphology..... 253, 357
 Mortar 217, 222, 290, 293, 294
 Mouse cytomegalovirus (mCMV) 40
 Mouse TLR7..... 22–25, 31
 Mouse TNF-α (mTNF-α) 24, 27
 MTT assay..... 232–233, 235, 238, 242, 296
 Multi-shRNA..... 126
 Murine herpes 8
 Murine renal ischemia 344
 Mutagenesis..... 320
 Mutant SOD1 (SOD1G93A)..... 321
 MWG..... 284, 285
 Myalgia..... 413
 Mycoplasma 285, 295
 Myeloma 299–308

Myeloproliferative disorders 428
 Myofilament 5
 Myriad 174
 MySQL relational database (RDBMS) 85, 89

N

Na-acetate 286
 Na-borate 177, 178
 Na₃-citrate x 2H₂O 286
 Na₂HPO₄ 23, 114, 216, 425
 Naked siRNA delivery 215
 NaN₃ 178
 Nanodrop 217, 401, 410
 Nanodrop Spectrophotometer 217, 401, 410
 Nanometer 284
 Nanoparticles 190, 216, 219–220
 Nasopharyngeal carcinoma
 (NPC) 44
 Natural killer (NK) cells 10, 49
 ND filters 274, 278, 280
Nef 54
Nef region 54
 Nematodes 5, 6, 8, 12–13
 Neocortex 320
 Neomycin (Neo) 110, 115, 346
 Neuroblastoma 333
 Neurodegenerative disease 211–227
 Neurogenesis 320
Neurospora crassa 4
 Neurotransmitters 214
 NF-κB1 344, 358
 NF-κB2 344, 358
 Ni-NTA agarose 273, 275, 277
 NLDC-145 176, 178, 179, 185
 Noble agar 248
 Nodaviridae 11
 Non-adherent cells 180
 Non-coding RNAs (ncRNAs) 35–59
 Nonconserved miRNAs 40
 Non-dividing 320
 Non-essential amino acids (NEAA) 402, 416
 Nonsense-mediated mRNA decay 38, 114
 Normocin 285
 Northern blotting 38, 89, 120,
 126–130, 290–292
 Notch ligands 330, 336
 NTS2 387, 388
 Nuclear factor κB (NF-κB) 344
 Nuclease-free 246–248, 251,
 252, 254–256, 267, 284, 285, 290
 Nucleases 13, 53, 97, 155–157, 175,
 194, 246–248, 251, 252, 254–256, 267, 277, 284,
 285, 316, 317, 384, 403

Nucleocapsid (NP) 398, 411
 Nucleolytic 317
 Nucleolytic degradation 317
 Nucleotides (NT) 3, 5, 9, 13, 22,
 23, 28, 32, 35, 36, 38, 41, 42, 52, 54, 56, 68, 70, 71,
 85, 93, 94, 96–102, 104, 114, 126, 127, 131, 134,
 138–140, 145, 147, 150, 151, 167, 212, 214, 225,
 243, 247, 293, 315, 326, 327, 384, 411, 412
 Nylon membrane Hybond 287

O

2'-O-alkylation 155
 2'-O-allyl 157
 2'-O-aminoethyl-ribooligonucleotides 156
 2'-O-aminopropylribooligonucleotides 156
 2'-O-butyl 156
 Ocular discharge 414
 2'-O-dimethylallyl 156
 Off-targeting 94
 Off-target silencing 68, 104
 2'-OH 156
 Oligoadenylate cyclase 8
 Oligoadenylate synthetase 1 (OAS1) 109
 Oligoadenylate synthetases (OAS) 102
 Oligodeoxynucleotides (ODN) 174, 344
 Oligo dT 23, 29, 177, 184,
 347, 350, 360, 363, 410
 Oligofectamine reagent 426, 429
 Oligomer cleavage 158
 Oligomers 157–159, 163, 165, 167, 233
 Oligo primer analysis 95, 101
 Oligoribonucleotides 24, 156
 Oligos 110, 111, 116, 164, 166, 345, 435
 OligoWalk 95, 139, 141–145, 147, 152
 2'-O-methoxyethoxy 156
 2'-O-methyl 104, 155, 156, 316, 398, 403
 2'-O-methyl modifications 104, 316
 Omohyoid muscles 418
 Oncogene 232, 234, 245
 Oncogenic 46, 50, 58, 174, 231–242
 Oncoprotein 244, 247, 248,
 255–265, 329, 330, 332
 One-Step Reverse Transcription-PCR
 System 425, 428
 Open reading frame 73 (ORF73) 50, 54, 96
 3'-O-phosphoramidites 160
 Ophthalmic lubricant 192
 Opioid 383, 384
 Optical density (OD) 117, 164–167,
 178, 218, 219, 224, 410, 418
 Opti-MEM 23, 28, 69, 75, 78, 375, 376
 ORF71. *See v-Flip*
 Osteopontin (SPP1) 50

- Ovalbumin (OVA).....361, 366, 367
Overhangs 7, 28, 32, 82, 88,
89, 93, 96, 97, 116, 138, 140, 155, 277, 315, 316
- P**
- PA..... 398, 411
PAE-Akt1247, 255–257
PAE-siRNA 252, 253
PageR Gold precast gels 301
1-Palmitoyl-2-oleoyl-*sn*-glycerol-3-phosphocholine
(POPC) 175, 178
1-Palmitoyl-2-oleoyl-*sn*-glycerol-3-phosphocholine
(POPC) 175, 178
Paraformaldehyde 217, 222, 360, 386, 392
Parkinson's disease 320
Passenger strand 7, 37, 126, 137, 140
Pathogenesis 9, 44, 45, 49, 55, 57, 344
PAZ domain 36
PB1 398, 411
PB2 398, 411
PCR reverse primer 184, 364
PD-1 330, 333, 334
PD-L2 330
pDNA 244, 245, 247, 265, 267
pEGFP-N2 247
PEI-complexed siRNA 3 292, 294
PEI F25-LMW 284, 287, 288, 292, 295
PEI-mediated delivery of nucleic acids 295
PEI/siRNA 284–289, 291–294
PEL-derived cell lines 50
p24 ELISA assay 126, 132, 133
Penicillin 69, 112, 117, 124,
176, 180, 182, 186, 198, 201, 206, 232, 274, 343,
359, 399, 400, 402, 414, 416
Penicillin-streptomycin mix (Nacalai
Tesque) 112, 113, 198, 200, 201, 206, 273
Peptides (polyplex) 175
PeqGOLD TriFas 285
Perforin 342
Peripheral blood mononuclear cells
(PBMCs) 22, 24–27, 31, 32, 58, 415, 416
Perl script 150
pET-TatU1A-C 273, 275
Petunia 4
pGL3-TK 68, 69, 72, 74, 75, 77
Pharmacodynamic 155, 159
Pharmacokinetic 155, 159, 190, 284, 292
Pharmacokinetic parameters 284
Pharmacopoeia 383
Phenol 112, 198, 202, 285, 290, 412
Phenotype 5, 104, 215, 332, 357, 424
Phenotypic screening 197, 207
Phenylmethylsulfonyl fluoride
(PMSF) 113, 217, 224, 233, 273, 300, 426
Phosphate buffered saline (PBS) 22, 23, 27,
29, 69, 76, 112–114, 117–119, 178, 180, 182, 185,
186, 198–204, 206–208, 216–218, 233, 239, 247,
248, 255, 258, 259, 263, 285, 293, 294, 300,
302–304, 343, 344, 346, 347, 350, 351, 353, 354,
360, 367, 369, 376, 378, 399, 400, 402, 405–409,
411, 414–416, 418, 420, 425, 427, 428, 432
Phosphitylation 160–162
Phosphoramidite 157–163
Phosphorothioate 155, 156, 167, 316
Phosphorylation 53, 236, 333
Phosphotungstic acid solution 247, 253
Photinus 68–72, 74, 76, 77
Photoinduced RNAi 271–280
Photoinducible 271, 272
Photostimulation 272, 274, 276–280
phRL-TK 68, 69, 72, 74, 75, 77
PI3K 231, 232, 236, 237
p-iodonitrotetrazolium 248, 261
4-Piperazinediethanesulfonic acid
(PIPES) 232
Piwi-interacting RNAs (piRNAs) 36
(³²P)-labeled material 296
Plaque assay 399–400, 405–406
Plasmacytoid 329, 357
Plasmacytoid dendritic cells 24, 329, 357
Plasmid 4, 43, 68, 69, 72–75, 77, 78,
110–112, 115, 116, 119, 124, 127, 189, 190, 197,
238, 247, 254, 255, 273, 295, 317, 319, 332, 343,
344, 346, 354, 399, 403, 404, 427, 431, 432, 435
Plasmid DNA 69, 73–75, 78,
112, 116, 119, 190, 197, 238, 295, 332, 344, 346,
403, 404, 431, 432, 435
Plasmid pET-TatU1A-C 273, 275
Plasticity related gene 1 (SRGN/PRG1) 50
Pol III promoters 124, 126
Pol II polycistronic transcript 124
Polyamidoamine dendrimers 216, 219
Polyarginine 408
Poly β -amino esters (PAEs) 244–247,
249–257, 265–267
Polycarbonate membrane 176, 179, 233
Polycation 216, 220, 266, 408
Poly (ethylene glycol) diacrylate
(PEGDA) 246, 249–250, 265, 266
Polyethylene glycol (PEG) 69, 75, 175,
178, 179, 216, 219, 244, 246, 250, 251, 266, 321
Polyethyleneimine (PEI) 215, 219,
220, 244, 246, 249–251, 265, 266, 283–296, 318,
408, 427, 432
Polyglutamine disorders 321
Poly-L-lysine 219
Poly L-lysine-coated glass slides 199, 202
Polylysine (PLL) 216, 219, 408

Polymerase chain reaction (PCR)..... 22, 23,
28–31, 40, 68, 72, 89, 110, 113, 117, 118, 120, 177,
183–186, 200, 204, 224, 232, 257, 285, 290–292,
299, 308, 343, 347–351, 355, 359–360, 363–365,
387, 388, 390, 394, 400, 401, 405, 409–413, 420,
425, 428–430, 432–434

Polymerases 8, 22, 28, 36, 37, 45,
49, 56, 99, 110, 111, 113, 115–117, 184, 285, 291,
315, 335, 348, 397, 401, 411, 413

Polymerase subunits 398

Polymer-based siRNA delivery..... 243–268

Polymeric..... 257

Polyomavirus 51–53

Polyplexes 244, 246–247, 251, 253–258

Poly-Prep chromatography 273

Post-mitotic..... 320

Post-transcriptional gene silencing..... 3–7, 10, 93, 137

Post-transcriptional regulators..... 35, 56

Potato virus X (PVX) 14, 15

Potyvirus Y (PVY) 15

Precursor miRNA (pre-miRNA)..... 7, 36, 37,
39, 40, 52, 126, 315

Pre-synaptic protein 59

Primary effusion lymphoma (PEL)..... 49, 50

Primary miRNAs (pri-miRNAs) 36, 37

Primate foamy type 1 (PFV-1) 8–10

pRNATU6.1, 343–344, 346, 354

Processing bodies (P-bodies) 37, 38

Programmed death-1 ligand
(PD-L1) 330, 336

Progressive multifocal leukoencephalopathy
(PML) 51, 52

Propidium iodide..... 248, 259–260, 427

Protease 54, 118, 119, 217,
224, 233, 300, 328

Proteasomes..... 328

Protein Assay Kit..... 273, 276

Protein G..... 176, 178

Protein kinase R (PKR)..... 8, 53, 55, 56,
58, 102, 109, 140, 316

Protonation..... 284

Protozoa 314

PstI-KpnI fragment..... 111, 115, 116

PUMA mRNA..... 43, 47

Puromycin 427, 431

PVDF membrane..... 234, 240, 301, 305, 306

Pyronin-Y 343

Q

qRT-PCR ELISA 285, 290–292, 410

Quantitative real-time polymerase chain reaction
(qRT-PCR) 285, 290

Quelling..... 3, 4

R

RACE assay kit 401

Radioactive labelling..... 134

Radio immuno precipitation assay
(RIPA-Lysis) buffer..... 217–218

Raf-1..... 317

Random hexamer primer..... 285, 291

Rapid amplification of cDNA ends
(RACE) 52, 401–402, 409, 411

RAW cells 25–26, 31, 32

RAW 264.7 cells 24, 25

rde-1..... 13

rde-4..... 13

Real-time machine 177

Real-time PCR..... 29, 120, 173, 177,
183–186, 299, 308, 343, 347–351, 355, 359, 363–365,
390, 394, 400–401, 409, 411, 425, 432–434

Real-Time SYBR green PCR system 425

Recombinant GM-CSF 176, 180, 359

Reference dye 177, 285, 360, 364

Regulatory T cells (Treg)..... 331, 357, 358,
361, 368–369

RelA..... 344, 358

RelB..... 344, 346–347, 358–362, 365–369

Renilla luciferase..... 67–70, 76, 77, 404–405

Repeat-associated small interfering
RNAs (rasiRNAs) 36

Reporter alleles 67–70, 72, 74, 76–78

Reporter protein (EGFP)..... 244, 247, 253–254

Restrains..... 191, 220

Retinoblastoma..... 428

Retinoic acid inducible gene I (RIG-I) 21

Retinoic-acid-inducible protein..... 8

Retrotransposon 8

Retroviral coat proteins (env) 54

Retrovirus 8, 9, 12, 42, 53, 55

Reversed-phase (RP)..... 164, 165

Reversed-phase HPLC 164

Reverse transcriptase (RT) 23, 39,
173, 177, 183–185, 285, 291, 347–350, 360, 425

Reverse transcription-polymerase chain reaction
(RT-PCR) 22, 28, 30, 40,
89, 110, 113, 117–118, 120, 184, 204, 290, 343,
348, 349, 351, 405, 425, 428–430

Reverse transfection..... 28, 197–209

Reversible permeabilization..... 302–305, 307

Revert Aid H Minus M-MuLV reverse
transcriptase..... 285

Reynolds rational rules 97

RFF-3..... 13

Rhodamine 247, 255–257, 268

Ribonuclease (RNase) III 36

Ribonucleo protein 7, 36, 37, 157, 163, 274, 315, 358

Ribonucleoprotein complexes.....	315
Ribonucleoside phosphoramidites.....	157
Ribophosphoramidites.....	157
Ribosomal RNA (rRNA).....	117, 410
Riboviruses.....	11
Ribozymes.....	138, 342
RIG-1.....	8, 140
RIPA buffer.....	113, 118, 224
RISC-mediated cleavage.....	145
RNA-binding protein (RBP).....	36, 272
RNA-binding protein kinase R (PKR).....	53, 102, 109, 140, 255, 316
RNA decapsulation.....	54
RNA degradation.....	410
RNA-dependent RNA polymerase (RdRp).....	8, 11–13, 15
RNA extraction.....	23, 29, 113, 133, 183, 217, 222, 226, 435
RNAi Codex.....	103
RNA-induced silencing complex (RISC).....	6, 7, 11, 13, 56, 93, 96, 99, 101, 102, 126, 137–140, 144, 145, 155, 174, 243, 245, 315, 326, 327, 358, 384, 403, 409, 411, 412
RNA-induced silencing complex (RISC/RITS).....	7, 56, 137, 315, 358
RNA interference (RNAi).....	3, 67, 81, 109, 137, 214, 283, 314, 326, 358, 383, 398, 418
RNAi pathway.....	6, 11, 15, 101, 147, 214
RNA isolation.....	177, 290, 347, 359, 363, 401, 409, 411
RNA-mediated gene silencing.....	13, 38
RNA oligomers.....	163, 165, 233
RNA-oligonucleotides.....	155
RNAplfold.....	144, 145, 150
RNA polymerase II.....	36, 37, 57, 99, 110, 335
RNA polymerase III.....	56, 99, 110
RNase.....	23, 29, 36, 39, 52, 68, 102, 169, 187, 190, 217, 223, 224, 247, 265, 274, 276, 277, 285, 290, 291, 300, 303, 308, 315, 316, 347, 355, 363, 375, 379, 400, 401, 410, 412, 420, 427
RNase A/T1 digestion.....	39
RNase AWAY® Reagent.....	400, 420
RNase-free buffer TE.....	217
RNase-free water.....	169, 187, 223, 224, 274, 285, 290, 300, 400, 401, 410
RNase III.....	3, 7, 36, 93, 175, 179, 315, 326, 358
RNase inhibitor.....	177, 285, 291, 347, 360, 363
RNaseL/PKR.....	8
RNase protection assay (RPA).....	39, 52
RNaseZap®.....	217, 222, 300, 303, 308
RNA spreading defective (rsd).....	12
RNAs.....	139, 144–150, 152
RNeasy minelute kit.....	217, 223
Roseolovirus.....	51
Rostrum ventral medulla.....	387
RP-HPLC.....	164–165
RPMI 1640.....	22, 124, 176, 180–182, 185, 186, 232, 233, 238, 248, 254, 255, 258, 260, 264, 300, 302, 303, 343, 346, 347, 359, 361, 362, 365–368
rrf-1.....	12
RSS Tas.....	8
S	
S100 calcium binding protein A2 (S100A2).....	50
SDS-PAGE protocol.....	224, 239–240
SDS-polyacrylamide accumulative gel.....	426
Segregation.....	6
Sephanous vein.....	221
Sepharose.....	176, 178, 180
shGFPU1A.....	279
ShortCut RNase.....	175, 179
Short hairpin RNA (shRNA).....	8, 53, 68, 95, 103, 104, 109–121, 123, 124, 126–127, 243–268, 271, 272, 274, 276–279, 295, 316, 320, 321, 329, 345, 346, 350, 398, 403, 431, 432
Short interfering RNA (siRNA).....	3, 21, 36, 67, 81, 93, 109, 124, 137, 155, 173, 189, 197, 211, 231, 243, 258, 271, 283, 299, 314, 326, 341, 373, 383, 398, 424
ShRNA-encoding.....	295
sid-1/rsd-8.....	12
Signalling pathways.....	47
Silence® Negative Control siRNA.....	199, 237, 369
Silica gel.....	157, 161, 162, 208
Simian immunodeficiency virus (SIV).....	54
Simian virus 12 (SV12).....	41, 52
Simian virus 40 (SV40).....	41, 51
Sindbis virus (SINV).....	11
Single nucleotide polymorphism (SNP).....	85, 96, 97
siRNA amplification.....	8, 11–13, 291, 319, 411
siRNA biodistribution.....	190, 286–287, 292–294
siRNA compaction ('condensation').....	284
siRNA delivery.....	24, 168, 175, 190, 194, 211–227, 243–268, 271–280, 284, 287, 292, 293, 317, 376
siRNA duplex.....	3, 7, 28, 70–72, 75, 96, 99, 102, 104, 138, 139, 168, 190, 191, 194, 300–305, 307, 308, 315, 374–377, 424, 429–431
siRNA-nanocomplex.....	220–221
siRNA_profile.....	96, 97, 99, 100, 103, 104
siRNA protocols.....	243
siRNA transfection.....	91, 181–182, 205, 215, 248, 288–290, 304, 305, 359, 361, 367, 370
Smad 2.....	333

Smad 3 10, 333
 Small temporal RNA (stRNA)..... 6
 SNAP25 51, 59
 snoRNA 126, 127
 SNP-based filtering..... 88
 snRNAs..... 156
 SOC medium 273, 275
 Sodium chloride (NaCl).....23, 68, 69,
 113, 114, 157, 158, 161, 162, 216, 233, 234, 247,
 256, 273, 274, 284–286, 292, 300, 301, 384, 385,
 425–427
 Sodium dodecyl sulfate (SDS).....113, 114,
 118–119, 125, 233, 300, 301, 343, 411, 426
 Sodium hydrogencarbonate..... 161
 Sodium orthovanadate.....217
 Sodium Pentobarbital (Nembutal)192
 Somatic cells..... 5
 Sonication..... 273, 277
 Spectrophotometer176, 217–219,
 224, 256, 401, 410
 Spectroscopy.....166, 246, 250
 Spermidine296
Sph I..... 68, 70, 71, 73, 74, 78
 Spinocerebellar ataxia type 1 321
 Splicing.....7, 81–91, 95–97, 425
 SSC buffer..... 286, 294
 Stacking buffer 234, 240
 Standard Northern blot hybridization 38
 STAT1..... 329
 Stereotaxic intra-cerebroventricular
 injection..... 329
 Sterilized MilliQ water..... 376
 Streptavidin-horseradish peroxidase
 (SAv-HRP)27, 132, 135
 Streptolysin-O (SLO) 299, 300, 302–305, 307, 308
 Streptomycin 69, 112, 124, 176,
 180, 182, 186, 198, 201, 206, 232, 274, 343, 359,
 399, 400, 402, 414
 Stripping buffer..... 301, 306
 Stylohyoid muscles 418
 Sugar moiety..... 160
 SuperScript III First-Strand Synthesis
 System 23, 29, 401, 410
 Superscript II Reverse
 Transcriptase..... 113, 117, 177, 184, 360, 363
 Supine.....193
 Suppressor of cytokine signaling 1
 (SOCS1)..... 329, 336
 SYBR Green23, 29, 177, 184,
 285, 291, 343, 348, 350, 360, 364, 401, 411, 425
 SYBR PrimeScript RT-PCR Kit..... 200, 204
 Synergism..... 15
 Synthetic oligonucleotides.....70, 71, 155
 Systemic administration 189, 316, 317, 321

Systemic injection..... 350
 Systemic RNAi defective (sid)..... 12

T

293T..... 43, 124, 236, 242, 375–377
 T antigens..... 52
 Taq DNA polymerase..... 113, 117, 184, 401, 413
 TaqMan Universal PCR Master Mix..... 401
 TAR element..... 39, 55
 Tat-peptide..... 272
 TatU1A 271–280
 TatU1A-Alexa..... 271, 272, 275–276, 278–280
 TBST buffer..... 426, 429
 Tc1..... 12
 T cell proliferation.....186, 334, 336
 T cell receptor (TCR)..... 328, 373
 T cells..... 48, 50, 54, 58, 124,
 133, 173, 174, 186, 326–336, 358, 373, 374
 T4 DNA ligase..... 343
 Terminal deoxynucleotidyl
 transferase (TdT).....343, 352, 413
 Terminus 97, 99, 100, 163, 193
 Tetrahydrofurane 161
 Tetrahymena..... 6
 Tetramethyl benzidine (TMB).....23, 27, 417
 T98G cells..... 22, 28–30
 TGF- β receptor (TGF- β R)..... 333
 Th1..... 326, 329, 331–332, 358
 Th2..... 331, 332, 374
 Th17..... 331
 Thermodynamic asymmetry..... 139
 Thermodynamic factors..... 99
 Thiolation..... 178, 187
 Th1-mediated immunity..... 332
 Th1 T cell..... 358
 Thymidine kinase49, 69, 70
 Thymidylate synthetase 49
 Tiny non-coding RNAs (tncRNAs)..... 36
 Tissue Culture Infective Dose 50
 (TCID50).....405–407, 409
 Tissue homogenization 222–224
 Tlc silica gel F₂₅₄..... 157
 TLR3..... 21
 TLR7/821, 22, 24, 103
 T lymphocytes 333
 Tobacco etch virus (TEV)..... 14
 Tolerogenic DCs (tol-DCs) 174, 358
 Toll-like receptors (TLRs).....7, 21, 25–27,
 140, 331, 379
 Topical application 373–380
 T7 polymerase 22
 T4 polynucleotide kinase..... 286, 293
 TRAF6..... 331
 TRAIL 200, 206

Transfection reagent..... 177
 Transactivating responsive (TAR) 36, 39, 55, 126, 127
 Transcriptional inhibition..... 4, 16
 Transcriptome 120, 214, 434
 Transduction buffer (Buffer-T) 273, 275,
 276, 278, 279
 Transfection complex..... 202, 203
 Transfection microarrays (TMAs)..... 198–199,
 201, 202, 206, 207
 Transforming growth factor- β
 (TGF- β)..... 10, 333
 Transgenes..... 4, 5, 11, 12
 Translation..... 35, 59, 94, 97, 139,
 314, 334–336, 383
 Translational repression..... 7, 16, 37, 214, 327
 Transposons..... 4, 7, 8, 12, 314
 Treg cells (CD4⁺CD25⁺ FoxP3⁺) 358
 Triethylamine (NEt₃) 157
 Triethylammonium acetate..... 164
 Trigeminal ganglia..... 43
 5'-Triphosphates 22, 27, 28
 Triple-shRNA expression vector 110, 115,
 116, 118, 120
 Tris-acetate-EDTA (TAE) buffer 69, 74,
 246, 251–253
 Tris-HCl 68, 69, 113, 176–179,
 233, 234, 285, 286, 300, 301, 343, 401, 413, 426
 Tris-phosphate 286
 Triton X-100 285, 300
 TRIzol 177, 183, 217, 222, 223, 226,
 347, 350, 359, 363, 401, 411, 412, 425, 428
 tRNAs..... 156
 Trypan blue 248, 258–300, 302
 TrypLE-Express 31
 Trypsin-EDTA..... 69, 124, 201,
 207, 232, 248, 258, 263, 399
 Tryptone 273
 Tubulointerstitial nephritis 51
 Tumor-associated antigen (TAA)..... 328
 Tumorigenesis 232, 244
 Tumor microenvironment..... 326, 328, 330, 333
 Tumor necrosis factor- α (TNF- α) 23, 317
 Tumor necrosis factor receptor (TNFR)..... 46
 Tumor-specific immune responses 328
 TurboCapture mRNA kit..... 200, 204
 Turnip crinkle virus (TCV)..... 14
 Turnip mosaic virus (TMV)..... 14
 Tuschl's and Reynold's rule..... 212
 Tyro3/Axl/Mer (TAM)..... 329, 336

U

U1..... 58, 274
 U6..... 110, 131, 431

U1A..... 272, 274, 276, 277
 U_L15..... 42
 U_L15.5..... 42
 U_L16..... 49
 U_L18..... 49
 U_L40..... 49
 U_L83..... 49
 U_L141..... 49
 U_L142..... 49
 α , β -Unsaturated 249
 3' Untranslated region (3'UTR)..... 9, 35, 45,
 46, 48, 50, 58, 78, 96, 97, 327
 Untranslated regions (UTRs) 9, 10, 35,
 45, 46, 48, 50, 51, 58, 70, 78, 96, 97, 327
 Uranil acetate solution 247, 253
 Uridine 22, 24, 160, 162
 UV..... 114, 121, 129, 158, 166,
 169, 218, 219, 246, 252, 253, 256, 267, 344
 UV-spectrophotometry..... 166
 UV-spectroscopy..... 166

V

Vacuum chamber..... 202, 203
 VAI..... 41, 46, 52, 53, 55, 56
 VAII..... 41, 46, 52, 53, 56
 VAII RNA..... 46, 53, 56
 VAI RNA 52, 53, 55, 56
 Vascular endothelial growth factor
 (VEGF) 320
 Vascular endothelial growth factor A
 (VEGF-A) 232
 Vascular thrombosis..... 350
 v-cyclin (ORF72) 50
 Vero cells 405
 Vesicular stomatitis virus (VSV) 9, 13
 v-Flip (ORF71)..... 50
 Viral carriers 317
 Viral encephalitis..... 52
 Viral-encoded miRNA..... 9
 Viral RNA transcripts 42, 43
 Viral tropism 9
 Viral vectors..... 123, 215, 320, 335
 Virus-induced gene silencing 5, 11, 14

W

Wallac Betaplate liquid scintillation
 counter..... 178, 186
 Western blot analysis..... 113–114, 118–120,
 225, 233–236, 238, 240–241, 257, 292, 299,
 301–308, 390, 394, 426, 428
 West Nile virus..... 10
 Wild-type alleles 71, 76, 77
 WST-1 assay 296

X

Xenograft.....	286, 292, 424, 428, 432, 435
Xeroderma pigmentosum group A (XPA).....	109, 111, 113–115, 118, 120, 121
Xiphoid.....	193
xMAP..	419
XP2OSSV	116
Xylazine	193, 216, 349, 386, 390, 391, 400, 402, 408, 414, 418
Xylenecyanol	286

Z

Zwitterionic oligonucleotides	156
-------------------------------------	-----