

# INDEX

## A

Amastigotes ..... v, 1, 69, 105, 169, 265, 280, 290, 304, 315  
 Automated image analysis ..... 279–287  
 Axenic amastigotes ..... v, 2, 4–6, 8, 169, 265–270, 273, 274,  
 290–292, 294–298

## B

Bioinformatics ..... 30–33, 70, 72, 73, 142, 157  
 Bone marrow-derived macrophages (BMMs) ..... 237–247,  
 252–255, 261, 266

## C

Cas9 ..... 189–208  
 CDSs ..... 174  
 Clustered regularly interspaced short palindromic repeats  
 (CRISPR) ..... 123, 169, 189–208  
 Colonization ..... 351, 352  
 Colony-stimulating factor-1 (CSF-1) ..... 238, 239,  
 241–244, 252  
 Conditional gene deletion ..... 211, 212, 215, 221  
 Conditional genome engineering ..... 225  
 Cos-Seq ..... 135, 141–166  
 Cre recombinase ..... 211, 225, 226  
 Cutaneous leishmaniasis (CL) ..... 315–344

## D

Deep sequencing ..... v  
 Development ..... 1, 4, 14, 83, 123, 238, 266, 273,  
 303, 316, 341, 352  
 Differential gene expression ..... 104  
 Differentiation ..... 1–8, 13, 23, 238, 239, 244,  
 252, 266, 269, 274  
 Dimerizable cre recombinase (DiCre) ..... 123, 169, 211–223,  
 225–235  
 DNA sequence analysis ..... 48, 177, 180  
 Drug resistance ..... 79, 82, 88, 141–166, 198, 206, 208, 212  
 Drug screening ..... 266, 271, 273, 275

## E

Essential genes ..... 211  
 Experimental infections ..... 290, 352, 364, 365

## F

Flow cytometry ..... 326–327, 334, 336–338, 343

## G

Gene editing ..... 123, 169, 190, 191, 195, 196  
 Gene expression ..... 95, 109, 225–235, 249, 251,  
 326, 334, 335  
 Genetic markers ..... 10

## H

Hamsters ..... 7, 90, 289, 303–313  
 High content analysis ..... 279–281, 283–285  
 High-content screening ..... 279, 282, 283

## I

Inducible gene expression ..... 225–235  
 Intracardiac (IC) ..... 304, 306–309  
 Intracellular amastigotes ..... 280, 281, 284, 285, 304  
 Intradermic (ID) ..... 159, 306, 310, 311  
 Intraperitoneal (IP) ..... 290, 293, 304, 306–308  
*In vitro* infections ..... 237–246, 251–255,  
 265–276, 279, 329

## K

Kinetoplastids ..... 23, 27, 59, 190  
 Knockouts (KO) ..... 189–208, 213, 214, 217, 218, 223

## L

LeishGEdit ..... 189–208  
*Leishmania* ..... v, 1–28, 33, 34, 38–41, 43, 51,  
 57, 59, 69–92, 95–97, 103, 105, 110, 123, 124, 127,  
 135–138, 141–166, 169, 170, 173, 175, 178–180, 184,  
 187, 189, 190, 192, 196, 200–203, 207, 211–223,  
 225–227, 232, 237, 238, 249–262, 279–284, 286, 287,  
 289–299, 303, 304, 306, 308–312, 315–317, 320–322,  
 339, 341, 344, 351–367  
*Leishmania*-infected THP-1 macrophages ..... 287  
*Leishmania* infections ..... 266, 279, 284, 289,  
 304, 306, 339, 366  
*Leishmania* intracellular parasites ..... 280  
*Leishmania major* ..... 232, 238, 365

Limiting-dilution (LD) ..... 138, 229, 290–292, 295, 311, 326, 333–334, 341  
 LoxP sites ..... 211, 212, 214, 226, 227

**M**

Macrophage-like cell lines ..... 265–276  
 Mouse models ..... 315–344  
 mRNA levels ..... 95, 97, 109  
 mRNAs ..... 95–97, 100, 104, 105, 109, 112, 227, 249, 251, 326, 334–336, 342  
 Multi locus approaches ..... 19–21

**N**

Next generation sequencing (NGS) ..... 69–92, 135, 136, 141, 173, 184

**P**

Phagolysosomes ..... 1  
 Phenotypic assays ..... 279  
*Phlebotomus* ..... 351–366  
 Phylogenetic inference methods ..... 10, 14, 18, 23, 28–29, 34, 49–54, 56  
 Phylogenetic inference software ..... 61  
 Phylogenetics ..... 9–60, 69, 86, 89  
 Ploidy variation ..... 77  
 Promastigotes ..... 1–7, 28, 69, 88, 91, 92, 105, 124, 127, 137, 142, 144, 151, 153, 169, 170, 172, 173, 180, 181, 200–202, 207, 214, 219, 221, 254, 266, 273, 274, 280, 282, 284, 286, 290, 292–295, 298, 304–306,

311, 312, 315, 319, 320, 324, 328–330, 333, 339, 340, 365, 366

**R**

Rapamycin ..... 211–213, 215, 221, 223, 226, 228, 231, 234  
 Retro-orbitary (RO) ..... 304, 306, 309–310  
 Ribosome profiling ..... 109–121  
 RNA-seq ..... 95

**S**

Signaling ..... 1  
 Single locus approaches ..... 11–12, 15–18, 23–28  
 SNP calling ..... 74, 76, 81–84, 86–88, 90, 92

**T**

Tagging ..... 189–208, 216  
 Taxonomic levels ..... 13, 33, 59  
 Transcriptome ..... 331, 341  
 Translational control ..... 109  
 Translational efficiency ..... 109  
 T7 RNA polymerase ..... 190, 195, 200, 201, 203  
 Trypanosomatids ..... 11, 23, 39–41, 60, 96, 97, 105, 109–121, 123

**V**

Visceral leishmaniasis (VL) ..... 289, 303–313, 315, 341, 353

**W**

Whole-mouse in vivo imaging ..... 291, 292, 294–298