Somatic Genome Variation

Description: A comprehensive review and integration of cutting-edge research worldwide that is revolutionizing science's understanding of genetic variation and inheritance.

Somatic Genome Variation in Animals, Plants, and Microorganisms provides a wide-ranging review of one of the most exciting and promising areas of genomics research. Featuring contributions from a team of distinguished researchers from around the world, it summarizes the growing body of evidence for developmental and environmental genome variation in microorganisms, plants, and animals while offering authoritative interpretations of identified genome variations.

Research currently underway at laboratories worldwide has begun to overturn many fixed beliefs about the nature of somatic genomes. For example, it has long been held that, except for epigenetic variation and occasional mutations caused by external mutagens, somatic cells are genetically identical and contribute nothing to inheritance; that gene transcript abundance is determined purely by promoter activity and RNA stability; and that clones have the same genome. The evidence assembled in this book challenges those assumptions, shedding new light on changes that occur to primary nucleotide sequences and ploidy of nuclear and cytoplasmic genomes during somatic development. The authors explore somatic genome variation, update various basic concepts in genetics and breeding, consider the implications of somatic genome variation for human health and agriculture, and propose an updated synthesis of inheritance supported by the evidence.

- Provides an updated view of somatic genomes and fundamental genetic theories while also offering interpretations of somatic genome variation
- Features wide-ranging coverage of developments at the forefront of one of today's most fascinating fields of research
- Increases our understanding of genetic variation that occurs during development and in response to environment
- Authored by a global team of experts in the field it presents up-to-date coverage of somatic genomes and genetic theories

Somatic Genome Variation in Animals, Plants, and Microorganisms is an important source of information and inspiration for geneticists, bioinformaticians, biologists, plant scientists, crop scientists, and microbiologists, as well as biomedical researchers.

Contents:

List of Contributors xv
Preface and Introduction xix
Acknowledgments xxi
About the Editor xxiii
Part I Somatic Genome Variation in Animals and Humans 1

1 Polyploidy in Animal Development and Disease 3
   Jennifer L. Bandura and Norman Zielke
   1.1 Introduction 3
   1.2 Mechanisms Inducing Somatic Polyploidy 4
   1.3 The Core Cell Cycle Machinery 8
   1.4 Genomic Organization of Polyploid Cells 9
Part III Somatic Genome Variation in Microorganisms 165

8 RNA–Mediated Somatic Genome Rearrangement in Ciliates 167
John R. Bracht

8.1 Introduction 168
8.2 Ciliates: Ubiquitous Eukaryotic Microorganisms with a Long Scientific History 168
8.3 Two S Company: Nuclear Dimorphism in Ciliates 170
8.4 Paramecium: Non–Mendelian Inheritance Comes to Light 171
8.5 Tetrahymena and the Origin of the scanRNA Model 173
8.6 Small RNAs in Stylonychia and Oxytricha 175
8.7 Long Noncoding RNA Templates in Genome Rearrangement 176
8.8 Long Noncoding RNA: An Interface for Short Noncoding RNA 177
8.9 Short RNA–Mediated Heterochromatin Formation and DNA Elimination 179
8.10 Transposable Elements and the Origins of Genome Rearrangements 182
8.11 Transposons, Phase Variation, and Programmed Genome Engineering in Bacteria 185
8.12 Transposases, Noncoding RNA, and Chromatin Modifications in VDJ Recombination of Vertebrates 186
8.13 Concluding Remarks: Ubiquitous Genome Variation, Transposons, and Noncoding RNA 187
Acknowledgments 187
References 187

9 Mitotic Genome Variations in Yeast and Other Fungi 199
Adrianna Skoneczna and Marek Skoneczny

9.1 Introduction 199
9.2 The Replication Process as a Possible Source of Genome Instability 200
9.3 Post–Replicative Repair (PRR) or Homologous Recombination (HR) Are Responsible for Error–Free and Error–Prone Repair of Blocking Lesions and Replication Stall–Borne Problems 219
9.4 Ploidy Maintenance and Chromosome Integrity Mechanisms 229
9.5 Concluding Remarks 234
References 235

Part IV General Genome Biology 251

10 Genome Variation in Archaeans, Bacteria, and Asexually Reproducing Eukaryotes 253
Xiu–Qing Li

10.1 Introduction 254
10.2 Chromosome Number in Prokaryote Species 254
10.3 Genome Size Variation in Archaeans and Bacteria 255
10.4 Archaeal and Bacterial Genome Size Distribution 256
10.5 Genomic GC Content in Archaeans, Bacteria, Fungi, Protists, Plants, and Animals 257
10.6 Correlation between GC Content and Genome or Chromosome Size 259
10.7 Genome Size and GC-Content Variation in Primarily Asexually Reproducing Fungi 260
10.8 Variation of Gene Direction 263
10.9 Concluding Remarks 263
Acknowledgments 264
References 264

11 RNA Polyadenylation Site Regions: Highly Similar in Base Composition Pattern but Diverse in Sequence A Combination Ensuring Similar Function but Avoiding Repetitive–Regions–Related Genomic Instability 267
Xiu–Qing Li and Donglei Du

11.1 General Introduction to Gene Number, Direction, and RNA Polyadenylation 268
11.2 Base Selection at the Poly(A) Tail Starting Position 269
11.3 Most Frequent Upstream Motifs in Microorganisms, Plants, and Animals 271
11.4 Motif Frequencies in the Whole Genome 273
11.5 The Top 20 Hexamer Motifs in the Poly(A) Site Region in Humans 273
11.6 Polyadenylation Signal Motif Distribution 273
11.7 Alternative Polyadenylation 275
11.8 Base Composition of 3' UTR in Plants and Animals 276
11.9 Base Composition Comparison between 3' UTR and Whole Genome 276
11.10 Base Composition of 3' COR in Plants and Animals 277
11.11 Base Composition Pattern of the Poly(A) Site Region in Protists 278
11.12 Base Composition Pattern of the Poly(A) Site Region in Plants 280
11.13 Base Composition Pattern of the Poly(A) Site Region in Animals 280
11.14 Comparison of Poly(A) Site Region Base Composition Patterns in Plants and Animals 280
11.15 Common U–A–U–A–U Base Abundance Pattern in the Poly(A) Site Region in Fungi, Plants, and Animals 284
11.16 Difference between the Most Frequent Motifs and Seqlogo–Showed Most Frequent Bases 284
11.17 RNA Structure of the Poly(A) Site Region 286
11.18 Low Conservation in the Overall Nucleotide Sequence of the Poly(A) Site Region 286
11.19 Poly(A) Site Region Stability and Somatic Genome Variation 286
11.20 Concluding Remarks 287
15 Molecular Mechanisms of Somatic Genome Variation 337
Xiu-Qing Li

15.1 Introduction 338

15.2 Mutation of Genes Involved in the Cell Cycle, Cell Division, or Centromere Function 338

15.3 DNA Damage 338

15.4 Variation in Induction and Activity of Radical–Scavenging Enzymes 339

15.5 DNA Cytosine Deaminases 340

15.6 Variation in Protective Roles of Pigments against Oxidative Damage 340

15.7 RNA–Templated DNA Repair 341

15.8 Errors in DNA Repair 341

15.9 RNA–Mediated Somatic Genome Rearrangement 342

15.10 Repetitive DNA Instability 342

15.11 Extracellular DNA 343

15.12 DNA Transposition 343

15.13 Somatic Crossover and Gene Conversion 343

15.14 Molecular Heterosis 344

15.15 Genome Damage Induced by Endoplasmic Reticulum Stress 344

15.16 Telomere Degeneration 344

15.17 Concluding Remarks 344

References 345

16 Hypotheses for Interpreting Somatic Genome Variation 351
Xiu-Qing Li

16.1 Introduction 352

16.2 Cell–Specific Accumulation of Somatic Genome Variation in Somatic Cells 352

16.3 Developmental Age and Genomic Network of Reproductive Cells 353

16.4 Genome Generation Cycle of Species 353

16.5 Somatic Genome Variation and Tissue–Specific Requirements during Growth or Development 354

16.6 Costs and Benefits of Somatic Genome Variation 354

16.7 Hypothesis on the Existence of a Primitive Stage in both Animals and Plants 355

16.8 Sources of Genetic Variation from in Vitro Culture Propagation 357

16.9 Hypothesis that Heterosis Is Created by Somatic Genome Variation 357

16.10 Genome Stability through Structural Similarity and Sequence Dissimilarity 358
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