Record Nr.	UNINA9910792476203321
Autore	Peter Isabelle S.
Titolo	Genomic control process : development and evolution / / Isabelle S. Peter, Eric H. Davidson
Pubbl/distr/stampa	London, England : , : Elsevier : , : AP, , 2015 ©2015
ISBN	0-12-404746-7
Descrizione fisica	1 online resource (461 p.)
Disciplina	572.86
Soggetti	Genomics
	Genes
	Embryology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Academic Press is an imprint of Elsevier"T.p.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	<ul> <li>Front Cover; IFC; GENOMIC CONTROL PROCESS; Copyright; About the Authors; Contents; Preface; Dedications; Chapter 1 - The Genome in Development; 1. Views of Development; 2. Levels of Control of Gene Expression: Transcriptional Regulation; 3. Levels of Control of Gene Expression: Noncoding RNAs; 4. Levels of Control of Gene Expression: Noncoding RNAs; 4. Levels of Control of Gene Expression: Noncoding RNAs; 4. Levels of Control of Gene Expression: Noncoding RNAs; 4. Levels of Control of Gene Expression: Noncoding RNAs; 4. Levels of Control of Gene Expression: Noncoding RNAs; 4. Levels of Control of Gene Expression: Histone Modifications; 5. The Regulatory Genome; REFERENCES; Chapter 2 - Gene Regulatory Networks; 1. Introductory Overview of Developmental GRNs; 2. Boolean Spatial Output; 3. Regulatory States; 4. Regulation in Cis; 5. Module Choice; 6. Transcriptional Dynamics 7. Historical Origins and Antecedents of GRN TheoryREFERENCES; Chapter 3 - Genomic Strategies for Embryonic Development; 1. Common Principles of Embryonic Development; 2. Phylogenetic Framework; 3. Genomic Strategies of Control in Mode 1 Embryonic Processes; 4. Genomic Strategies of Control in Mode 2 Embryonic Processes; 5. Global Aspects of A/P Spatial Regulatory Patterning in the Syncytial Drosophila Blastoderm; REFERENCES; Chapter 4 - Genomic Control Processes in Adult Body Part Formation; 1. Common Principles of Body Part Formation; 2. Limbs in Amniotes; 3. Fly Legs</li> <li>4. Establishment of Spatial Regulatory States in Early Development of Fly and Mammalian Brains5. The Vertebrate Heart; 6. Spatial Regulatory</li> </ul>

1.

	State Subdivision in and Around the Drosophila Ocellus; 7. The Vertebrate Gut; Chapter 5 - Genomic Strategies for Terminal Cell Fate Specification; 1. Circumstances of Terminal Cell Fate Specification; 2. Combinatorial Cis-Regulatory Definition of Differentiation Gene Batteries; 3. Cell Type Specification in Multipotential Embryonic Precursors; 4. A Comment on Stem Cells in Postembryonic Life 5. Modular Call-Up of Given Specification Processes in Multiple Developmental ContextsREFERENCES; Chapter 6 - On the Modeling of Developmental Gene Regulatory Networks; 1. Topological Network Models; 2. ODE Models of Circuit Dynamics; 3. Boolean Models of Network Logic; 4. Conclusions; REFERENCES; Chapter 7 - Evolution of Bilaterian Animals: Processes of Change and Stasis in Hierarchical Developmental Gene Regulatory Networks; 1. Introduction: Evolution by Genomic Change at Different Levels of GRN Hierarchy; 2. Evolution of the Body Plan by Co-Optive Alteration of GRN Structure 3. GRN Stasis and Phylogeny4. Trans-Phyletic Conservation of Cell Type-Specific Regulatory States; 5. Bilaterian Evolution; REFERENCES; Gene Index; Subject Index
Sommario/riassunto	Genomic Control Process explores the biological phenomena around genomic regulatory systems that control and shape animal development processes, and which determine the nature of evolutionary processes that affect body plan. Unifying and simplifying the descriptions of development and evolution by focusing on the causality in these processes, it provides a comprehensive method of considering genomic control across diverse biological processes. This book is essential for graduate researchers in genomics, systems biology and molecular biology seeking to understand deep biological processes w