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Descrizione fisica	1 online resource (396 p.)
Altri autori (Persone)	von SchantzMalcolm
Disciplina	572.8 572.86 660.65
Soggetti	Cloning, Molecular DNA, Recombinant DNA Genes Genetic Engineering Genomes Genetic engineering Genome Genetic Structures Genetic Techniques Investigative Techniques Genetic Phenomena Nucleic Acids Analytical, Diagnostic and Therapeutic Techniques and Equipment Phenomena and Processes Nucleic Acids, Nucleotides, and Nucleosides Chemicals and Drugs Genetics Biology Health & Biological Sciences

Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	<p>""From Genes to Genomes""; ""Contents""; ""Preface""; ""1: Introduction""; ""2: Basic Molecular Biology""; ""2.1 Nucleic acid structure""; ""2.2 What is a gene?""; ""2.3 Information flow: gene expression""; ""2.4 Gene structure and organization""; ""3: How to Clone a Gene""; ""3.1 What is cloning?""; ""3.2 Overview of the procedures""; ""3.3 Gene libraries""; ""3.4 Hybridization""; ""3.5 Polymerase chain reaction""; ""3.6 Extraction and purification of nucleic acids""; ""3.7 Detection and quantitation of nucleic acids""; ""3.8 Gel electrophoresis""; ""4: Cutting and Joining DNA""</p> <p>""4.1 Restriction endonucleases""""4.2 Ligation""; ""4.3 Modification of restriction fragment ends""; ""4.4 Other ways of joining DNA molecules""; ""5: Vectors""; ""5.1 Plasmid vectors""; ""5.2 Vectors based on the lambda bacteriophage""; ""5.3 Cosmids""; ""5.4 M13 vectors""; ""5.5 Expression vectors""; ""5.6 Vectors for cloning and expression in eukaryotic cells""; ""5.7 Supervectors: YACs and BACs""; ""5.8 Summary""; ""6: Genomic and cDNA Libraries""; ""6.1 Genomic libraries""; ""6.2 Growing and storing libraries""; ""6.3 cDNA libraries""; ""6.4 Random, arrayed and ordered libraries""</p> <p>""7: Finding the Right Clone""""7.1 Screening libraries with gene probes""; ""7.2 Screening expression libraries with antibodies""; ""7.3 Subcloning""; ""7.4 Characterization of plasmid clones""; ""8: Polymerase Chain Reaction""; ""8.1 The PCR reaction""; ""8.2 PCR in practice""; ""8.3 Cloning PCR products""; ""8.4 Long-range PCR""; ""8.5 Reverse-transcription PCR""; ""8.6 Rapid amplification of cDNA ends""; ""8.7 Quantitative PCR""; ""8.8 Applications of PCR""; ""9: Characterization of a Cloned Gene""; ""9.1 DNA sequencing""; ""9.2 Databank entries and annotation""; ""9.3 Sequence analysis""</p> <p>""9.4 Sequence comparisons""""9.5 Protein structure""; ""9.6 Confirming gene function""; ""10: Analysis of Gene Expression""; ""10.1 Analysing transcription""; ""10.2 Methods for studying the promoter""; ""10.3 Regulatory elements and DNA-binding proteins""; ""10.4 Translational analysis""; ""11: Products from Native and Manipulated Cloned Genes""; ""11.1 Factors affecting expression of cloned genes""; ""11.2 Expression of cloned genes in bacteria""; ""11.3 Expression in eukaryotic host cells""; ""11.4 Adding tags and signals""; ""11.5 In vitro mutagenesis""; ""11.6 Vaccines""</p> <p>""12: Genomic Analysis""""12.1 Genome sequencing""; ""12.2 Analysis and annotation""; ""12.3 Comparing genomes""; ""12.4 Genome browsers""; ""12.5 Relating genes and functions: genetic and physical maps""; ""12.6 Transposon mutagenesis and other screening techniques""; ""12.7 Conclusion""; ""13: Analysis of Genetic Variation""; ""13.1 Single nucleotide polymorphisms""; ""13.2 Larger-scale variations""; ""13.3 Other methods for studying variation""; ""13.4 Human genetic diseases""; ""13.5 Molecular phylogeny""; ""14: Post-genomic Analysis""; ""14.1 Analysing transcription; transcriptomes""</p> <p>""14.2 Array-based methods""</p>
Sommario/riassunto	Rapid advances in our understanding of genetics have required that new books contain topics such as the concept and theory of gene cloning, transgenics, genomics, and various other coverage of traditional and contemporary subjects. Although there is an abundance of textbooks that cover introductory genetics and advanced courses in

genetics, there is a noticeable gap at the intermediate (second year) level. In the past gene structure, function and expression were taught at final year /postgraduate level, but the rapid advances in our understanding of genetics has encouraged courses to change considerably. Over recent years these topics have filtered down the curriculum and are currently taught as core topics at second year, with a corresponding change in textbook requirements. Where once second year students were restricted to learning about the concept and theory of gene cloning, now they routinely clone genes for themselves as part of their practical assignments. Genes to Genomics will fill the gap, cover much of the same ground as previous titles, but go further on contemporary topics like transgenics, sequence comparison and analysis of variation.; A concise, up to date textbook that provides a balanced coverage of traditional and contemporary topics taught within intermediate courses in molecular genetics Jeremy Dale has a proven track record as the successful author of Molecular Genetics of Bacteria Genes to Genomics will include a series of feature box-outs that will examine some of the topical issues related to the scientific concepts and examples explored within the text A range of questions and exercises including worked examples and web-based practicals An accompanying web site will allow the authors to keep their audience up to date in the areas that are prone to date most rapidly between successive editions of the textbook. It will also include the illustrations and images from the textbook, in addition to worked examples, answers to questions within the book, and links to related websites of key interest.
