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ISBN	978-3-030-21309-1
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (556 pages)
Disciplina	660.65 591.35
Soggetti	Genetics Biotechnology Veterinary medicine Genetics and Genomics Veterinary Science Chemical Bioengineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part1: Gut microbiome and nutritional biotechnology -- Metagenomics for utilizing the herbivore gut potential -- Gut/rumen microbiome- a livestock and industrial perspective -- Anaerobic gut fungi- a biotechnological perspective -- Microbial resources from wild and captive animals -- Insect gut- a treasure of microbes and microbial enzymes -- Nutraceuticals from bioengineered organisms -- Designer probiotics: the next-gen high efficiency biotherapeutics -- Part 2: Assisted reproduction biotechnology -- Revolutionary reproduction biotechnologies in livestock: an overview -- Cryopreservation of oocytes and embryos -- Somatic cell nuclear transfer -- Micromanipulation technology in health and assisted reproduction -- Reproduction advances in buffaloes -- Reproduction biotechnology in camelids -- Reproduction biotechnology in cattle -- Reproduction biotechnology in pig -- Biotechnology in wildlife -- Assisted reproduction in equines -- Assisted reproduction in cats and dogs.- Stem cells and cellular reprogramming to advance livestock industry --

Spermatogonial and oogonial stem cells in farm animals --  
Parthenogenesis- a potential tool to reproductive biotechnology --  
Transgenesis and genetically engineered livestock as live bioreactors --  
Animal stem cells- a perspective on their use in human health -- Fish  
and poultry transgenics -- Part 3: Livestock genomics -- Animal  
genomics- a current perspective -- Analysis of genome diversity --  
Analysis of Genome Mapping -- Generation and analysis of whole  
genome mapping -- Digital PCR -- Transcriptomics -- Proteomics --  
Metabolomics -- Synthetic biology -- Bioinformatics and web-based  
tools for genome sequence data analysis -- Part 4: Health  
biotechnology -- Animal biotechnology in human health -- Designer  
milk -- Marine bio-resources- animals and veterinary applications --  
RNA interference (RNAi) technology -- Big from small: micro RNA in  
relation to veterinary sciences -- Genome editing in farm animals --  
Next Generation Sequencing vis-à-vis Veterinary Health Management  
-- Computer-aided drug discovery -- Part 5: Animal biotechnology in  
global perspective -- Steps towards sustainable livestock: technologies  
to conserve and boost the indigenous livestock -- Biotechnology for  
wildlife -- Non-meat alternatives -- Career opportunities in animal  
biotechnology -- Intellectual property rights in animal biotechnology.

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### Sommario/riassunto

This book presents significant innovations in animal biotechnology and their relevance to humans. It offers an update on cutting-edge technologies and advances in key aspects of genetic engineering, metagenomics, assisted reproduction, biotechnology in veterinary health, as well as the role of gut and marine microbial ecosystems in industrial development. It also includes chapters on camelids, fishery, designer milk and nutraceuticals from bioengineered organisms and reviews scientific advances such as genomics and transcriptomics with reference to their applications in the animal industry. The chapters from expert authors are organised in five themed parts; Part I "Gut microbiome and nutritional biotechnology", Part II "Assisted reproduction biotechnology", Part III "Livestock genomics", Part IV "Health biotechnology" and Part V "Animal biotechnology in global perspective". Its broad spectrum makes this work a valuable resource for professionals, researchers, academics and students in the field of veterinary and animal production as well as the biotechnological industry.

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