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Nota di contenuto	Equine Genomics; Contents; Contributors; Preface; 1 Defining the equine genome: The nuclear genome and the mitochondrial genome; Nuclear Genome of the Horse; Chromosome number, karyotype, and schematic presentation; Application of different banding techniques; Chromosome aberrations - a brief overview; Mitochondrial Genome of the Horse; Structure, function, and utility; Phylogenetics of Equus; New research directions; Acknowledgments; References; 2 Genetic linkage maps; Introduction; Genetic Linkage Maps; Polymorphic Genetic Markers; Reference Pedigrees; Horse Genetic Linkage Maps The Uppsala mapThe International Horse Reference Family Panel (IHRFP) map; The Newmarket map; The International Equine Gene Mapping Workshop (IEGMW) linkage map; the merging of contemporary linkage maps; The Selection of Microsatellite Mapping Panels for the Dissection of Inherited Conditions in the Horse; The Continuing Usefulness of the Equine Linkage Map; For monogenic trait mapping; In assembling the genome sequence; References; 3 Physical and comparative maps; Introduction; Horse Chromosomes; Chromosome number; Chromosome identification; Chromosome size; The horse karyotype Gene Mapping in Horses - Historical BackgroundCytogenetic Map; Fluorescence in situ hybridization; FISH mapping in the horse;

Multicolor and high-resolution FISH; Physical mapping using flow-sorted and microdissected chromosomes; FISH for mapping chromosome and genome rearrangements; Somatic Cell Hybrid (SCH) Panels and Synteny Mapping; Radiation Hybrid (RH) Panels and RH Mapping; RH mapping methodology; Horse RH panels; RH mapping in the horse; Comparative Map; Zoo-FISH maps; High-resolution comparative maps; Concluding remarks; References; 4 The Y-Chromosome; Introduction; Cytogenetics
Molecular ProbesGenes; Maps; The Pseudoautosomal Region (PAR); Disorders; Male infertility; The PAR and sex chromosome aneuploidies; Sex reversal syndrome; Polymorphism and Population Studies; Y chromosome in Other Equids and Perissodactyls; Cytogenetics; Genes and mapping; Polymorphism; Concluding Remarks; Acknowledgments; References; 5 Unexpected structural features of the equine major histocompatibility complex; Organization and Gene Content of the Model MHC; Some MHC Genes Are Highly Polymorphic; The Molecular Map of the Equine Leucocyte Antigen Complex; RT-PCR
Chromatin Modifications Associated with TranscriptionSummary; References; 6 Assembly and analysis of the equine genome sequence; Introduction; Sequencing a Genome; Features of the Equine Genome Assembly; Comparison with Genetic Maps; Repetitive Elements; Synteny with Humans; Special Centromeres; Genes; A Single Nucleotide Polymorphism Map; Genomic Attributes of Equine Breeds; Summary; Acknowledgments; References; 7 Genomic tools and resources: Development and applications of an equine SNP genotyping array; Introduction; Development of an Equine SNP Genotyping Array
Equine SNP50 Beadchip Design and Validation in the Domestic Horse

Sommario/riassunto

Analysis of the equine genome began just over a decade ago, culminating in the recent complete sequencing of the horse genome. The availability of the equine whole genome sequence represents the successful completion of an important era of equine genome analysis, and the beginning of a new era where the sequence information will catalyze the development of new tools and resources that will permit study of a range of traits that are economically important and are significant to equine health and welfare. Equine Genomics provides a timely comprehensive overview of equine genomic res