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Nota di contenuto	Deadly Innovations: Unraveling the Molecular Evolution of Animal Venoms -- Squamate Reptile Genomics and Evolution -- Venoms of Colubrids -- Phylogenetics of Scorpions of Medical Importance -- Scorpion Venom Gland Transcriptomics and Proteomics: An Overview -- Brown Spider Venom: The Identification and Biotechnological Potential of Venom Toxins -- Venom Toxins of Fire Ants -- The Platypus: A Venomous Mammal -- Structure-Function Relationship of Modular Domains of P-III Class -- Snake Venom Metalloproteinases -- Biological Activities and Assays of the Snake Venom Metalloproteinases (SVMPs) -- Three-Dimensional Structures and Mechanisms of Snake Venom Serine Proteinases, Metalloproteinases, and Phospholipase A2s -- Structure-Function Relationship in Heterodimeric Neurotoxin PLA2s from Viperidae Snakes Inhabiting Europe, South America, and Asia -- Snake Venom Phospholipase A2: Evolution and Diversity. - Automated Mass Fingerprinting of Venoms in Nanogram Range: Review of Technology -- Snake Venom Peptidomics -- Snake Venom Proteopeptidomics: What Lies Behind the Curtain -- Shotgun Approaches for Venom Analysis -- Purinergic Mechanisms of Prey

Sommario/riassunto

This volume provides the reader with recent advances in the fields of molecular toxinology, the biotechnological applications of venom toxins, and antivenom production. The content of the twenty chapters of *Venom Genomics and Proteomics* illustrates not only the enormous progress made since the implementation of omics technologies in the field of toxinology, but one also realizes the road still ahead to reach a holistic view of venomous systems. Advancement in high-throughput technologies in the field of venomics has resulted in the ability to generate comprehensive venom profiles for many species. However, research on snake genomes is still in its infancy, although such studies are eagerly awaited to gain insights into the evolutionary history of snake venom proteins, including the mechanisms that originated venom and the regulation of toxin expression. Fortunately, this objective is also at the reach of current omic technologies. Therefore it would not be unrealistic to predict a bright near future to the field of molecular toxinology. *Venom Genomics and Proteomics* covers research into the venom of scaled reptiles (lizards and snakes), scorpions, spiders, ants and platypuses. Special consideration is given to a number of observations made in the area of snake venom and in the application of advanced genomics and proteomics techniques on a variety of venom samples. The final chapters give some insight into the potential clinical uses of venom derivatives and into the importance and challenges faced in the production and quality control of antivenoms. .
