

1. Record Nr.	UNINA9910495193203321
Autore	Mukherjee Ashis K.
Titolo	The big four snakes of India : venom composition, pharmacological properties and treatment of envenomation // Ashis K. Mukherjee
Pubbl/distr/stampa	Singapore : , : Springer, , [2021] ©2021
ISBN	981-16-2896-3
Descrizione fisica	1 online resource (171 pages)
Disciplina	615.942
Soggetti	Poisonous snakes - Venom - India Serpents Verins animals Antidotes Llibres electrònics Índia
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Preface -- Contents -- About the Author -- 1: Introduction -- 1.1 A Glimpse of the Venomous Snakes of India -- 1.2 The Concept of the ``Big Four'' and Non-``Big Four'' Medically Important Venomous Snakes of India -- 1.3 Medical Aspects of Snakebite: The Snakebite Problem -- 1.3.1 Snakebite in Developed Countries -- 1.3.2 Epidemiology of Snakebite in Asia -- 1.3.3 Epidemiology of Snakebite in India -- 1.4 Key Issues Pertaining to Snakebite in India -- References -- 2: Evolution of Snakes and Systematics of the ``Big Four'' Venomous Snakes of India -- 2.1 Evolution of Snakes -- 2.2 Studies of the Genomics, Phenomics, and Fossil Record Show the Origin and Evolution of Snakes -- 2.3 Studies on the Genomic Regression of Claw Keratin, Taste Receptors, and Light-Associated Genes and the Evolutionary Origin... -- 2.4 Skull Evolution and the Ecological Origin of Snakes -- 2.5 Systematics of the ``Big Four'' Venomous Snakes of India -- 2.6 The ``Big Four'' Venomous Snakes of India Represent the Advanced Group of Snakes -- 2.6.1 Family Elapidae -- 2.6.1.1 Genus <i>Bungarus</i> (Kraits) -- 2.6.1.2 Genus <i>Naja</i> (Cobras) -- 2.6.2 Family

Viperidae -- 2.6.2.1 Genus *Daboia* -- 2.6.2.2 Genus *Echis* -- References -- 3: Snake Venom: Composition, Function, and Biomedical Applications -- 3.1 The Venom Gland and Venom Delivery Apparatus in the Viperidae and Elapidae Families of Snakes -- 3.2 Comprehensive Review of the Venom Composition of the ``Big Four'' Venomous Snakes of India -- 3.2.1 Enzymatic Toxins of the ``Big Four'' Snake Venoms -- 3.2.2 Nonenzymatic Toxins in the ``Big Four'' Snake Venoms -- 3.2.3 Nonprotein Components of Snake Venom -- 3.3 Variation in Snake Venom Composition and Its Impact on the Pathogenesis of Snakebite and Antivenom Treatment -- 3.4 Evolution of Genes for the Toxins in Snake Venom -- 3.4.1 Toxicofera Hypothesis. 3.4.2 Independent Origin Hypothesis -- 3.5 Mechanism of the Evolution and Diversification of Venom Proteins -- 3.5.1 Accelerated Evolution of Venom Protein Genes -- 3.5.2 Selection Pressure for Rapid Adaptive Evolution -- 3.5.3 Diet and Snake Venom Evolution -- 3.6 Biological Functions of Venom -- 3.6.1 Prey-Specific Venom Toxicity -- 3.6.2 Immobilization and Predigestion of Prey -- 3.6.3 Prey Re-localization -- 3.7 Indian Snake Venom Proteins: A Treasure House of Drug Prototypes and Diagnostic Tool -- References -- 4: Indian Spectacled Cobra (*Naja naja*) -- 4.1 Taxonomic Classification of the Indian Spectacled Cobra (*Naja naja*) -- 4.2 Characteristic Features of the Indian Spectacled Cobra -- 4.3 Geographical Distribution and Reproduction of the Indian Spectacled Cobra -- 4.4 Biochemical Composition of the Indian Spectacled Cobra Venom -- 4.5 Biochemical and Proteomic Analyses to Demonstrate the Geographical Differences in Venom Composition of Indian Spectacled C... -- 4.6 Genomic and Transcriptomic Analyses of Indian Spectacled Cobra Venom Toxins -- 4.7 Species-Specific Differences in the Venom Composition Between *N. naja* and *N. kaouthia* from the Same Geographical Location ... -- 4.8 Pharmacology, Pathophysiology, and Clinical Features of Indian Spectacled Cobra Envenomation -- References -- 5: Indian Common Krait (*Bungarus caeruleus*) -- 5.1 Taxonomic Classification of the Indian Common Krait (*Bungarus caeruleus*) -- 5.2 Characteristic Features of the Indian Common Krait -- 5.3 Geographical Distribution, Habitat, Behavior, and Reproduction of the Indian Common Krait -- 5.4 Venom Composition of the Indian Common Krait -- 5.5 Pharmacology, Pathophysiology, and Clinical Features of the Indian Common Krait Envenomation -- References -- 6: Indian Russell's Viper (*Daboia russelii*) -- 6.1 Taxonomic Classification of Indian Russell's Viper (*Daboia russelii*). 6.2 Characteristic Features of the Indian Russell's Viper -- 6.3 Geographical Distribution, Habitat, and Reproduction of Indian Russell's Viper -- 6.4 Composition of Indian Russell's Viper Venom -- 6.5 Pharmacology, Pathophysiology, and Clinical Features of Envenomation by Indian Russell's Viper -- References -- 7: Indian Saw-Scaled Viper (*Echis carinatus carinatus*) -- 7.1 Taxonomic Classification of the Indian Saw-Scaled Viper (*Echis carinatus carinatus*) -- 7.2 Characteristic Features of the Indian Saw-Scaled Viper -- 7.3 Geographic Distribution, Habitat, Behavior, and Reproduction of the Indian Saw-Scaled Viper -- 7.4 Composition of the Indian Saw-Scaled Viper Venom -- 7.5 Pharmacology, Pathophysiology, and Clinical Features of Envenomation by the Indian Saw-Scaled Viper -- References -- 8: Prevention and Treatment of the ``Big Four'' Snakebite in India -- 8.1 Prevention of Snakebite: Some Useful Strategies -- 8.2 First Aid for Snakebite -- 8.2.1 First Aid for Snakebite: World Health Organization-Recommended Guidelines -- 8.3 Antivenom Production in India -- 8.3.1 Monovalent vs. Polyvalent Antivenom -- 8.3.2

Production of F(ab')2 PAV in India -- 8.3.3 Quality Control of Commercial Antivenom: World Health Organization Guidelines -- 8.3.3.1 In Vitro Laboratory Tests -- 8.3.3.2 Preclinical Tests on Experimental Animal Models -- 8.3.3.3 Clinical Tests on Volunteers -- 8.4 Diagnosis and Clinical Treatment of Snakebite -- 8.5 Management of Adverse Effects of Antivenom -- 8.5.1 Early Adverse Reactions -- 8.5.2 Endotoxin-Mediated Pyrogenic Reactions -- 8.5.3 Late Serum Reactions -- 8.5.4 Prevention and Treatment of Adverse Serum Reactions -- 8.6 Geographical and Species-Specific Variation in Snake Venom Composition and Its Impact on Antivenom Treatment -- References.
