

Sadaf Jahan
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A Mechanistic Exploration of Natural Compounds for Neuronal Health

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 Springer

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Preface

The proposed book, *Unlocking Neuronal Health: A Mechanistic Exploration of Natural Compounds*, will delve into the fascinating realm of natural compounds and their mechanistic effects on restoring and promoting neuronal health. This book provides a comprehensive overview of the underlying mechanisms through which natural compounds exert their neuroprotective properties, offering a deeper understanding of their therapeutic potential for neurodegenerative disorders. By exploring the intricate interactions between natural compounds and neuronal pathways, this book seeks to bridge the gap between scientific research and practical applications, facilitating the development of novel therapeutic strategies. Chapters included in the book provide detailed information regarding the neurodegenerative disorders, neuronal complications, and reasons behind the culprit. Moreover, many chapters shed light on the mechanistic approach and involvement of natural compounds as therapeutic strategies, thus helpful in the restoration of neuronal health. Ultimately, this book will contribute to the advancement of knowledge in the field and inspire further research and development in this promising area of neuroscience.

Neurodegenerative disorders, such as Alzheimer's disease, Parkinson's disease, and Huntington's disease, pose significant challenges to individuals, families, and healthcare systems worldwide. While conventional treatments offer limited symptomatic relief, the search for more effective and disease-modifying therapies continues. The use of natural compounds derived from plants in the treatment of neurodegenerative disorders is an area of growing interest. These compounds possess diverse chemical structures and biological activities that can target multiple underlying mechanisms involved in neurodegeneration. Through a mechanistic approach, natural compounds offer several potential ways to mitigate the progression of neurodegenerative disorders and promote neuronal health, like anti-inflammatory, anti-oxidative, neurotransmitters, etc.

We would like to express our gratitude to all authors who participated to complete the book. Without their support, this project seems to be incomplete. We also appreciate the role of Springer staff who constantly supported us to complete the project.

There are numerous people who deserve thanks. I, Sadaf Jahan, would like to begin by thanking the Almighty and my late grandma, Mrs. Akhtari Begam, for their unceasing support. My parents, Mr. Furkan Ali and Mrs. Farhat Sultana, my brothers, Mr. Shoeb Ali and Mr. Suhail Ali, and all family members have been a

major source of inspiration for me throughout my life. My husband Muhammad Alam, my son Azlaan Muhammad Umar, and my daughter Huda Jahan Alam are great blessing and support to complete this book successfully.

I, Arif Siddiqui, express my special thanks to my parents Mr. Hakimuddin Siddiqui and Mrs. Shahnaz Begum, wife Ruhi Parveen, son Ariz Siddiqui, daughter Ayzal Siddiqui, and all family members for their everlasting love, enthusiasm for science, and encouragement to pursue every task successfully.

I, Andleeb Khan, would like to express my thanks to the Almighty for giving us this vision. My sincere thanks to my parents, Mr. Jameel Uddin Khan and Late Mrs. Anis Un Nisa. My sister, Qudsiya Fatima, has always guided me in all the wax and wane of life. I would like to thank my husband Dr. Syed Wajahat Ali and my kids Syed Muhammad Ali and Muhammad Shayaan Syed for their seamless support while compiling this book.

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Contents

1	Mechanisms of Neuronal Damage and Dysfunction	1
	Uzair Ahmad Ansari	
2	Natural Compounds and Neuroprotection	43
	Vipin K Yadav and Chetan Singh Rajpurohit	
3	Natural Compounds and Their Mechanism of Action: Therapeutic Targets of Neuroprotection and Neurorestoration in Neurodegenerative Diseases	69
	Ehraz M. Siddiqui, Mashoqe Ahmad Rather, Sadaf Jahan, Arif Jamal Siddiqui, and Andleeb Khan	
4	Neurotransmitter Modulation and Cognitive Enhancement	109
	Dipak Kumar, Ranvijay Singh, and Abhishek Kumar Mishra	
5	Natural Compounds and Neuroinflammation	143
	Vishal Mathur, Shaheen Ali, Iqra Zai, and Anam Ilyas	
6	Natural Compounds and Mitochondrial Function	179
	Mohsin Vahid Khan, Mohd. Rumman, Gulam Rabbani, Mohd Kamil Hussain, Sameer Ahmad, and Nafees Ahmad	
7	Natural Compounds and Oxidative Stress Management	207
	Ruchi Yadav, Namira Sana, Uzma Afaq, Chand Bibi, and Jahanarah Khatoon	
8	Natural Compounds as Epigenetic Modulators to Treat Neurodegenerative Disorders	227
	Mohammad Rumman and Mohsin Vahid Khan	
9	Targeting Endoplasmic Reticulum to Treat Neurodegenerative Disorders	249
	Chetan Singh Rajpurohit and Vipin K Yadav	