

NEUROLOGY - LABORATORY
AND CLINICAL RESEARCH
DEVELOPMENTS



MEDICINE
and
HEALTH

Rahul Kumar Sharma, PhD • Shailesh Sharma, PhD
Ajmer Singh Grewal, PhD • Geeta Deswal, PhD
Ashwani K. Dhingra, PhD • Kumar Guarve, PhD
Editors

Natural Solutions for Neurodegenerative Disorders

Exploring Botanical
Remedies

NOVA

Rahul Kumar Sharma, PhD
Shailesh Sharma, PhD
Ajmer Singh Grewal, PhD
Geeta Deswal, PhD
Ashwani K. Dhingra, PhD
Kumar Guarve, PhD
Editors

Natural Solutions for Neurodegenerative Disorders

Exploring Botanical
Remedies

 nova
science publishers
www.novapublishers.com



Contents

Preface	vii
Chapter 1	A Historical Perspective on Botanical Remedies for Neurodegenerative Disorders	1
	H. K. Sundeep Kumar Priyadarshini Mishra, Mrityunjay Banerjee, Suman Acharyya and Bipasha Behera ¹	1
Chapter 2	Emerging Trends in Botanical Research for Neurogenerative Disorders	15
	Vishnu Mittal, Anjali Sharma and Devkant Sharma	15
Chapter 3	Amyotrophic Lateral Sclerosis (ALS) and Botanical Therapies	35
	Arushi, Kavita Munjal, Hitesh Chopra, Vinod Kumar Gauttam, Chetan Vashist, Pratinav Pandey and Mayank Goyal	35
Chapter 4	Curcumin for Neuroprotection: An Update	53
	Ashna Gupta, Priyanka Kriplani and Bhawna Chopra	53
Chapter 5	Neuroprotective Effects of Green Tea Extracts	67
	Vani Shukla, Arun Kumar, Sahil Hussain, Mohemmed Faraz Khan and Syed Kaynat Fatima	67
Chapter 6	<i>Bacopa monnieri</i>: A Cognitive Enhancer and Neuroprotectant	85
	Rahul Sarathee Kathirvel, Hema Gandhi, Shikha Baghel Chauhan and Indu Singh	85
Chapter 7	Ashwagandha and Neurodegeneration	93

	Preeti, Gaurav Gaur, Rahul Kumar Sharma, Jyoti Verma, Shailesh Sharma and Neelam Sharma	93
Chapter 8	Ginseng: Potential Benefits in Neurodegenerative Disorders	107
	Hema Gandhi, Shikha Baghel Chauhan and Indu Singh.....	107
Chapter 9	Potential Benefits of <i>Ginkgo biloba</i> for Neurodegenerative Disorders	127
	Shilpa Thakur, Karan Sharma, Vinod Kumar Gauttam, Arushi Sharma and Shiv Kumar	127
Chapter 10	<i>Rhodiola rosea</i> Potential in Neurodegeneration	143
	Shiwali Sharma, Preeti Bisht, Narinderpal Kaur, Pallavi Bassi and Balraj Saini.....	143
Chapter 11	The Role of Catechins in Neuroprotection	157
	Prabhjot Kaur, Muskan, Anjali Sharma, Bharat Prashar and Shivangi Garg	157
Chapter 12	Huperzine A: A Natural Cholinesterase Inhibitor	175
	Aditya Kumar, Akash Jain, Arjun Singh, Sonia Kamboj and Jasmine Chaudhary.....	175
Chapter 13	Botanical Interventions for Parkinson's Disease	191
	Navjot Kaur, Navdeep Kaur, Baljeet Singh, Arvinder Pal Singh and Simrandeep Singh	191
Chapter 14	Botanicals in Alzheimer's Disease Management	211
	Kavita Munjal, Hitesh Chopra, Vinod Kumar Gauttam, Shailendra Sharma and Rukhsar Syed.....	211
Chapter 15	The Application of Nanophytoherbals in Parkinson's Therapy	225
	Shivanki Joshi, Neha Saini, Aakriti Saini and Swati	
Chapter 16	Adverse Effects of Botanical Interventions	237
	Nitin Pandey, Ahsan Ahmed Khan, Kuldeep Singh, Arun Kumar, Mohemmed Faraz Khan, Syed Mehndi Hasan Zaidi and Maaz Khan	

Chapter 17	Phytochemicals and Nutraceuticals of <i>Moringa oleifera</i> Lam.: Treating Neurodegenerative Disorders	253
	Varsha Nigam	
About the Editors		269
Index		275

Chapter 16

Adverse Effects of Botanical Interventions

Nitin Pandey

Ahsan Ahmed Khan*

Kuldeep Singh

Arun Kumar

Mohammed Faraz Khan

Syed Mehndi Hasan Zaidi

and Maaz Khan

Faculty of Pharmacy, Integral University, Dashauli, Kursi Road, Lucknow,
Uttar Pradesh, India

Abstract

Modern healthcare increasingly recognizes the value of botanical treatments, which build on a long tradition of using plants and plant-derived chemicals for medicinal purposes. Despite their potential benefits, these therapies can pose risks. Adverse effects may arise from plant-drug interactions, allergic reactions, toxin contamination, and improper dosage or administration. Known allergic reactions to certain plants highlight the need for comprehensive patient evaluation and allergen screening. Herb-drug interactions can be particularly dangerous when herbal remedies influence the metabolism and effectiveness of conventional medications. Contamination with toxic substances, such as heavy metals and pesticide residues, remains a significant issue in the production and sale of botanical products, underscoring the importance of stringent quality control. Incorrect dosing and administration can

* Corresponding Author's Email: ahsankhan@iul.ac.in.

In: Natural Solutions for Neurodegenerative Disorders

Editors: Rahul Kumar Sharma, Shailesh Sharma, Ajmer Singh Grewal et al.

ISBN: 979-8-89530-231-6

© 2025 Nova Science Publishers, Inc.

Complimentary Copy