

Neuroprotective Agents: Implications for Parkinson's Disease Treatment



MENU



By	Algantri, KR (Algantri, Khaled Ramadan) ; Mohamed, W (Mohamed, Wael) ; Nasir, MHM (Nasir, Mohd Hamzah Mohd) ; Nahas, ARMF (Nahas, Abdul Rahman Mahmoud Fata)
Source	CURRENT ALZHEIMER RESEARCH DOI: 10.2174/0115672050368080250529075006
Early Access	JUL 2025
Indexed	2025-10-13
Document Type	Review; Early Access
Abstract	Parkinson's disease (PD) is a multifaceted neurodegenerative condition marked by the progressive loss of dopaminergic neurons, leading to impairments in movement and cognition. This research offers an in-depth examination of the pathophysiological pathways associated with PD, emphasising the roles of oxidative stress, mitochondrial dysfunction, and neuroinflammation. The study examines the interaction between genetic and environmental factors in the development of PD, highlighting the significance of oxidative stress, mitochondrial dysfunction, and excitotoxicity in the degeneration of dopaminergic neurons. It also looks into the impact of neuroinflammation and microglial activation on the causes of PD. Despite considerable progress in research, there remains a lack of effective treatments that can modify the course of the disease, highlighting the pressing need for new therapeutic approaches that address mitochondrial malfunction, oxidative

stress, and neuroinflammation. This study assesses the neuroprotective efficacy of various substances, notably natural agents like resveratrol, curcumin, ginsenoside, and melatonin, for managing PD. Although these natural chemicals show promise, further robust clinical trials are needed to confirm their effectiveness and safety, as well as to investigate their potential incorporation into conventional PD treatment.

Keywords

Author Keywords: Neuroprotective agents; Parkinson's disease (PD); reactive oxygen species (ROS); substantia nigra pars compacta (SNpc); bradykinesia; mitochondrial dysfunction

Keywords Plus: DOPAMINERGIC-NEURONS; PHOENIX-DACTYLIFERA; DIETARY SUPPLEMENTATION; CLINICAL PROGRESSION; ANTIOXIDANT ACTIVITY; COMBINATION THERAPY; NEUROTROPHIC FACTOR; OXIDATIVE STRESS; VITAMIN-E; MODEL

Addresses

¹ Widad Univ Coll, Fac Med, Med Educ Unit, Bandar Indera Mahkota BIM Point, Kuantan 25200, Pahang, Malaysia

² Int Islamic Univ Malaysia, Dept Basic Med Sci, Kuantan 25200, Pahang, Malaysia

³ Menoufia Univ, Menoufia Med Sch, Clin Pharmacol Dept, Menoufia, Egypt

⁴ Int Islamic Univ Malaysia, Kulliyyah Sci, Dept Biotechnol, Bandar Indera Mahkota 25200, Kuantan, Malaysia

⁵ Int Islamic Univ Malaysia, Dept Pharm Practice, Kulliyyah Pharm, Kuantan 25200, Pahang, Malaysia

**Categories/
Classification**

Research Areas: Neurosciences & Neurology

**Web of Science
Categories**

Clinical Neurology; Neurosciences

Language

English

**Accession
Number**

WOS:001588054000001

ISSN

1567-2050

eISSN

1875-5828

IDS Number 8GK3V

— [See fewer data fields](#)

Citation Network

In Web of Science Core Collection

1
Citation

174
Cited References

Use in Web of Science

0 **0**
Last 180 Days Since 2013

This record is from:

Web of Science Core Collection

- Science Citation Index Expanded (SCI-EXPANDED)

Suggest a correction

If you would like to improve the quality of the data in this record, please [Suggest a correction](#)



© 2025 Clarivate. All rights reserved.

Legal	Training	Cookie	Accessibility
Center	Portal	Policy	Help
Privacy	Product	Manage	Terms of
Statement	Support	cookie	Use
Copyright	Newsletter	preferences	
Notice		Data	
		Correction	

Follow Us

