Review Article

Neuroprotective Effects, Biological Activities and Therapeutic Potential of Phytochemicals: A Comprehensive Review

Shi Qiu1,2, Ai-hua Zhang2, Jian-hua Miao1, Hui Sun2, Guang-li Yan2, Fang-fang Wu1,2 and Xi-jun Wang1,2*

1National Engineering Laboratory for the Development of Southwestern Endangered Medicinal Materials, Guangxi Botanical Garden of Medicinal Plant, Nanning Guangxi, China
2Sino-America Chinmedomics Technology Collaboration Center, National TCM Key Laboratory of Serum Pharmacology, Chinmedomics Research Center of State Administration of TCM, Laboratory of Metabolomics, Department of Pharmaceutical Analysis, Heilongjiang University of Chinese Medicine, Harbin, China

ARTICLE INFO

Article history:
Received: 18 February, 2020
Accepted: 6 March, 2020
Published: 24 March, 2020

Keywords:
Phytochemicals
neuroprotective effects
natural products
lead drug
pharmacological targets

ABSTRACT

The incidence of neurological disorders is growing in the world together with an increased lifespan. Nowadays, there are still no effective treatments for neurodegenerative pathology, which make necessary to search for new therapeutic agents. Natural products, most of them used in phytochemicals from herbal medicine, are considered promising alternatives for the treatment of neurodegenerative diseases. Numerous herbs have been applied to neurodegenerative disease treatments as complementary and alternative medicines. In the 21st century, omics-coupled functional pharmacology was developed for neurodegenerative drug discovery from natural products. In this article, we firstly provide the latest understanding of neurological disorders on risk factors, category, diagnosis and treatment, and then specially present an overview of natural products in neuroprotective effects research from chemical biology to pharmacological targets, and also discuss the natural products application and future challenge.

© 2020 Xi-jun Wang, Hosting by Science Repository. All rights reserved

Get access to the full version of this article: http://dx.doi.org/10.31487/j.AJMC.2020.01.04

*Correspondence to: Prof. Xi-jun Wang, Sino-America Chinmedomics Technology Collaboration Center, National TCM Key Laboratory of Serum Pharmacology, Chinmedomics Research Center of State Administration of TCM, Laboratory of Metabolomics, Department of Pharmaceutical Analysis, Heilongjiang University of Chinese Medicine, Heping Road 24, Harbin, National Engineering Laboratory for the Development of Southwestern Endangered Medicinal Materials, Guangxi Botanical Garden of Medicinal Plant, Nanning Guangxi, China; Tel: 8645182110818; Fax: 8645182110818; E-mail: xijunwangls@126.com

© 2020 Xi-jun Wang. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. Hosting by Science Repository. All rights reserved.

http://dx.doi.org/10.31487/j.AJMC.2020.01.04