



Mitochondrial Physiology and Vegetal Molecules Therapeutic Potential of Natural Compounds on Mitochondrial Health

2021, Pages 413-437

Chapter 19 - Caffeine and mitochondria with a focus on the central nervous system

Saeideh Momtaz ^{a, b*}, Shokoufeh Hassani ^{b*}, Armin Salek Maghsoudi ^b, Amir Hossein Abdolghaffari ^a, Mohammad Abdollahi ^b

Show more 

 Outline |  Share  Cite

<https://doi.org/10.1016/B978-0-12-821562-3.00021-6>

[Get rights and content](#)

Abstract

Mitochondria are central pieces of machinery of energy production within the cells. Mitochondrial deficits may be functional and structural or a result from aberrations in mitochondrial DNA (mtDNA), which is associated with several metabolic and chronic impairments. Improvement of mitochondrial function may be achieved by a verity of natural and chemical agents. Thereby, pathways or agents that regulate mitochondrial function are therapeutic targets for these diseases. Caffeine was shown to induce mitochondrial function and biogenesis. Depending on caffeine concentration and the target organ, this compound plays both inhibitory and stimulating roles on mitochondrial function. Here, we present a brief introduction to caffeine and its pharmacological activities. Besides, the involvement of mitochondria in some physiological actions at the presence of caffeine is discussed, with specific emphasis on caffeine effects on neurodegenerative diseases.

 Previous

Next 

Keywords

Mitochondria; Caffeine; Physiological actions; Neurodegenerative diseases

Recommended articles

Cited by (0)

* These authors contributed equally as the first author.

Copyright © 2021 Elsevier Inc. All rights reserved.



Copyright © 2022 Elsevier B.V. or its licensors or contributors.
ScienceDirect® is a registered trademark of Elsevier B.V.

