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The protective effects of natural products on blood-brain barrier breakdown

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Abstract

The blood-brain barrier (BBB) is a protective fence between the central nervous system and the systemic circulation, and is essential for maintaining the normal homeostasis of the central nervous system. BBB breakdown is instigated in many neurological disorders such as Alzheimer's disease and multiple sclerosis. Recent literature has advanced the knowledge on the physiology and pathophysiology of BBB breakdown, including the attribution of detrimental inducers and signalling transduction cascades. Natural products, such as flavonoids, phenolic compounds, terpenes, alkaloids, lipids and phthalides have been reported to attenuate many neurological diseases by modulating the signalling transduction cascades associated with BBB breakdown. Understanding the activities of these natural products through the molecular mechanisms associated with BBB breakdown will offer considerable scope in the discovery and development of novel agents for preventing BBB breakdown and thus, the progression of neurological disorders.

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