Neuroprotection by curcumin: A review on brain delivery strategies

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Neurodegenerative diseases are a major global public health concern in the elderly population but therapeutic options are limited. Curcumin is a hydrophobic polyphenol extracted from the dried rhizomes of Curcuma longa L. and shows good potential for the treatment of neurodegenerative diseases and brain tumors. The blood?brain barrier (BBB) is the major obstacle for the delivery of curcumin into the brain, limiting its therapeutic potential. The development of promising approaches to facilitate curcumin transportation across the BBB may resolve some of the problems associated with drug delivery. Studies have shown nano delivery of curcumin can improve a number of outcome measures in neurodegenerative diseases. The present review highlights current and emerging strategies to facilitate curcumin permeation across the BBB for the treatment of various neurodegenerative diseases.

Blood-brain barrier

Curcumin

Drug delivery

Nanotechnology

Neurodegeneration

curcumin

liposome

magnetic nanoparticle

nanocarrier

neuroprotective agent

polymer

solid lipid nanoparticle

blood brain barrier

chemical modification

degenerative disease

drug delivery system

drug penetration

human

liposomal delivery

micellization

neuroprotection

nonhuman

priority journal

Review