

# Chitosan-based delivery systems for curcumin: A review of pharmacodynamic and pharmacokinetic aspects

Saheb M.

Fereydouni N.

Nemati S.

Barreto G.E.

Johnston T.P.

Sahebkar A.

Effective drug delivery is one of the most important issues associated with the administration of therapeutic agents that have low oral bioavailability. Curcumin is an active ingredient in the turmeric plant, which has low oral bioavailability due to its poor aqueous solubility. One strategy that has been considered for enhancing the aqueous solubility, and, thus, its oral bioavailability, is the use of chitosan as a carrier for curcumin. Chitosan is a biodegradable and biocompatible polymer that is relatively water-soluble. Therefore, various studies have sought to improve the aqueous solubility of chitosan. The use of different pharmaceutical excipients and formulation strategies has the potential to improve aqueous solubility, formulation processing, and the overall delivery of hydrophobic drugs. This review focuses on various methods utilized for chitosan-based delivery of curcumin. © 2019

Wiley Periodicals, Inc.

bioavailability

chitosan

curcumin

drug delivery

solubility

chitosan

chitosan coated nanoparticle

chitosan nanoparticle

curcumin

excipient

magnetic nanoparticle

nanocomposite

polyelectrolyte

polymer

turmeric

unclassified drug

chitosan

curcumin

drug carrier

nanoparticle

cross linking

drug bioavailability

drug delivery system

drug solubility

endocytosis

human

nonhuman

pharmacodynamics

priority journal

Review

animal

bioavailability

chemistry

neoplasm

Animals

Biological Availability

Chitosan

Curcumin

Drug Carriers

Humans

Nanoparticles

Neoplasms