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Liposomal Curcumin

National Cancer Institute

Source

National Cancer Institute. *Liposomal Curcumin*. NCI Thesaurus. Code C116322.

A liposomal formulation containing curcumin, a poorly water-soluble polyphenol pigment isolated from the plant *Curcuma longa*, with potential antineoplastic, chemopreventive, antioxidant, anti-angiogenic and anti-inflammatory activities. Upon intravenous administration of liposomal curcumin, this agent blocks the formation of reactive-oxygen species, neutralizes free radicals, and exhibits anti-inflammatory properties as a result of inhibition of cyclooxygenases (COX) and other enzymes involved in inflammation. In addition, curcumin disrupts various cell signal transduction pathways involved in carcinogenesis, inhibits the activity of nuclear factor-kappa B (NF- κ B), SRC, and annexin A2 (ANXA2), and reduces the expression of both matrix metalloproteinase-9 (MMP-9) and vascular endothelial growth factor receptor 2 (VEGFR2). This prevents and/or inhibits tumor cell formation and proliferation. Liposome encapsulation of curcumin improves its efficacy, when compared to the administration of unencapsulated curcumin.