Curcumin

Curcumin (C8069) is found in turmeric, a plant of the ginger family. Turmeric has traditionally been used to dye clothing and to preserve food. Along with curcumin, the two other primary curcuminoids present in turmeric are **Demethoxycurcumin (D1850)** and **Bisdemethoxycurcumin (B3573)**. These three compounds exhibit antioxidative, anticancer, anti-inflammatory, and antimicrobial properties.

Curcumin displays antiviral activity, inhibiting HIV-1 integrase activity in vitro[1]. HIV integrase is a key regulator of the retroviral life cycle. Additionally, curcumin inhibits HIV-1 replication[2].

Curcumin also exhibits neuroprotective activity. This compound prevents formation of soluble oligomers in amyloid-β-infused animal models[3]. Aggregation of amyloid-β (Aβ) fibrils into plaques is a key process in the progression of Alzheimer's disease. Curcumin accumulates near amyloid deposits in vivo; it also prevents the formation of new Aβ plaques and clears existing aggregations[4].

In cellular models of breast cancer, curcumin decreases metastatic activity. In this study, curcumin prevents transcription of CXCL1 and CXCL2, silencing activity of CXCR4 and other metastasis-promoting proteins[5].

Other studies highlight a different role for curcumin in cancer models. In one study, curcumin promotes the progression of lung lesions from benign hyperplasias to adenomas and carcinomas.

Available curcuminoids:
C8069 Curcumin
C8070 Curcumin (high purity)
D1850 Demethoxycurcumin
B3573 Bisdemethoxycurcumin
D3449 Dimethoxycurcumin
D3420 3,4-Difluorobenzocurcumin

When compared to BHT, a known carcinogen, administration of curcumin induces a similar increase in tumor growth and progression. This carcinogenic potential may be linked to modulation of ROS levels and oxidative stress in lung tissue[6]. This compound also disrupts the natural conformation of tumor suppressor p53, inhibiting its ability to bind DNA and induce cell cycle arrest[7].

In addition to curcumin, LKT Laboratories carries several other curcuminoids, including **3,4-Difluoro-benzocurcumin (D3420)**. This compound is in early stages of research but shows potential activity in a variety of biological applications as it exhibits better pharmacokinetic bioavailability and stronger pharmacological activity than curcumin[8].

References:
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