**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. HIV integrase is a key regulator of the retroviral life cycle. Additionally, curcumin inhibits HIV-1 replication.

Curcumin also exhibits neuroprotective activity. This compound prevents formation of soluble oligomers in amyloid-β-infused animal models. 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.

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.

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. This compound also disrupts the natural conformation of tumor suppressor p53, inhibiting its ability to bind DNA and induce cell cycle arrest.

In addition to curcumin, LKT Laboratories carries several other curcuminoids, including **3,4-Difluorobenzocurcumin (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.

References: