Curcumin Analogues with Enhanced Antitumor Activities

Curcumin, a dietary constituent of turmeric, has chemopreventive and chemotherapeutic potentials against various types of cancers, but low bioavailability prevents its use in chemotherapeutic applications. GO-Y030 and GO-Y078 are new synthetic analogues of curcumin, developed by Shibata, Iwabuchi et al. to increase its potential and circumvent its low bioavailability. According to their reports, GO-Y030 shows a 30-fold greater suppression of tumor cell growth compared with curcumin. GO-Y030 inhibits signal transducers and activators of transcription 3 (STAT3) and IKKβ kinase, and suppresses tumor growth of cancer stem cells. GO-Y030 and GO-Y078 suppress the growth of myeloma cells, and are 7 to 12 times more effective than curcumin. GO-Y030 and GO-Y078 are also 6- to 15-fold stronger multi-target inhibitors of NF-κB, PI3K/AKT, JAK/STAT3 and IRF4 pathways than curcumin. GO-Y078 also potently inhibits interleukin 6 (IL-6) production 14-fold more than curcumin, and inhibits tumor angiogenesis through actin disorganization. In addition, GO-Y078 has the additional characteristics of improved water solubility (GO-Y078: 1.07 mg/L, curcumin: 0.54 mg/L) and effectiveness in a mouse model of gastric cancer. Furthermore, the structure activity relationships of these compounds have been reported.

Advantages

- Enhanced Antitumor Activities
- Strong Multi-Target Inhibitory Activities
- Increased Bioavailability
- Improved Water Solubility (GO-Y078)

References


Related Products

Curcumin (Natural)
Curcumin (Synthetic)

For Laboratory Use, Research Purposes Only.

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