

Review *Curr Med Chem.* 2021;28(39):8116-8138. doi: 10.2174/0929867327666201111145212.

Anti-tumor Effects of Curcuminoids in Glioblastoma Multiforme: An Updated Literature Review

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PMID: 33176632 DOI: [10.2174/0929867327666201111145212](https://doi.org/10.2174/0929867327666201111145212)

Abstract

Glioblastoma Multiforme (GBM) is a poorly curable brain tumor because of its extremely invasive nature. Curcuminoids, as potential phytochemicals extracted from *Curcuma Longa* L., have been documented for their chemopreventive and antitumor activities against several types of malignancies. These compounds exert these effects via modulation of multiple signaling pathways and molecular targets at different stages of tumor progression, proliferation, and metastasis. In experimental studies, curcuminoids have demonstrated promising therapeutic benefits to overcome GBM. Curcuminoids have been shown to exert their anti-GBM effects through regulation of angiogenesis, apoptosis, autophagy, metastasis, invasion, as well as potential molecular targets, including receptor tyrosine kinases, Sonic Hedgehog, and NF- κ B. This study reviews the observations regarding the impact of curcumin and its derivatives on GBM and the potential of translating the research findings into the clinic.

Keywords: Glioblastoma multiforme; antitumor activities; autophagy; curcuminoids; invasion.; metastasis; phytochemicals; signaling pathways.

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