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Bioorg Med Chem Lett. 2011 Feb 1;21(3):1010-4. Epub 2010 Dec 10.

Synthesis and preliminary evaluation of curcumin analogues as cytotoxic agents.

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Abstract

A series of curcumin analogues with different substituents at the 4-position of the phenyl group were synthesized and screened for in vitro cytotoxicity against a panel of human cancer cell lines. Several novel curcumin analogues, especially 32 and 34, exhibited selective and potent cytotoxic activity against human epidermoid carcinoma cell line A-431 and human glioblastoma cell line U-251, implying their specific potential in the chemoprevention and chemotherapy of skin cancer and glioma. The preliminary SAR information extracted from the results suggested that introduction of appropriate substituents to the 4'-positions could be a promising approach for the development of new cytotoxic curcumin analogues with special selectivity for A-431 and U-251 cell lines.

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PMID: 21215629 [PubMed - in process]

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