Cinnamaldehydes in Cancer Chemotherapy.

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Abstract:

Cinnamaldehyde and cinnamaldehyde-derived compounds are candidates for the development of anticancer drugs that have received extensive research attention. In this review, we summarize recent findings detailing the positive and negative aspects of cinnamaldehyde and its derivatives as potential anticancer drug candidates. Furthermore, we describe the in vivo pharmacokinetics and metabolism of cinnamaldehydes. The oxidative and antioxidative properties of cinnamaldehydes, which contribute to their potential in chemotherapy, have also been discussed. Moreover, the mechanism(s) by which cinnamaldehydes induce apoptosis in cancer cells have been explored. In addition, evidence of the regulatory effects of cinnamaldehydes on cancer cell invasion and metastasis has been described. Finally, the application of cinnamaldehydes in treating various types of cancer, including breast, prostate, and colon cancers, has been discussed in detail. The effects of cinnamaldehydes on leukemia, hepatocellular carcinoma, and oral cancer have been summarized briefly.

Keywords:

2′-benzoyloxycinnamaldehyde; 2′-hydroxycinnamaldehyde; apoptosis; cancer chemotherapy; cinnamaldehyde

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