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# Honokiol: An anticancer lignan.

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## Abstract

**BACKGROUND:** Honokiol ((3',5-di-(2-propenyl)-1,1'-biphenyl-2,2'-diol), a lignan, is a promising antitumor compound, having exerted activity against a number of human cancer cell lines. Honokiol has inhibitory role on the proliferation, invasion and survival of cancer cells in in vitro as well as in vivo studies. It interferes with signaling pathways components in order to elicit the anticancer effect.

**SCOPE AND APPROACH:** In present review, the published data on the efficacy of honokiol against various cancer cell lines and tumor-bearing animal models has been presented and discussed.

**KEY FINDINGS AND CONCLUSIONS:** Honokiol lowers the expression of pluripotency-factors, the formation of mammosphere, P-glycoprotein expression, receptor CXCR4 level, c-FLIP, steroid receptor coactivator-3 (SRC-3), Twist1, matrix metalloproteinases, class I histone deacetylases, H3K27 methyltransferase among numerous other anticancer functions. It increases bone morphogenetic protein 7 (BMP7), Bax protein, among others. It does so by interfering with the major checkpoints such as nuclear factor kappa B (NF-κB), and activator of transcription 3 (STAT3), mammalian target of rapamycin (m-TOR), epidermal growth factor receptor (EGFR), Sonic hedgehog (SHH). It promotes the efficacy of several anticancer drugs and radiation tolerance. The derivatization of honokiol results in compounds with interesting attributes in terms of cancer control. This review will shed light on the scopes and hurdles in the relevance of the bioactive lignan honokiol in cancer management.



**KEYWORDS:** Breast cancer; Honokiol; Ovarian and lung cancer; Prostate cancer; Signaling pathways

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