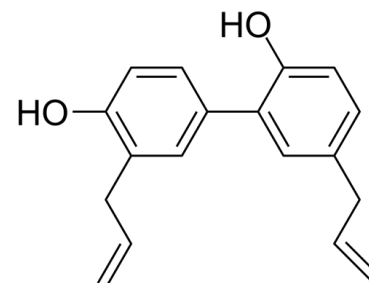


Data Sheet

Product Name:	Honokiol
Cat. No.:	CS-1696
CAS No.:	35354-74-6
Molecular Formula:	C ₁₈ H ₁₈ O ₂
Molecular Weight:	266.33
Target:	Akt; Autophagy; ERK; HCV
Pathway:	Anti-infection; Autophagy; MAPK/ERK Pathway; PI3K/Akt/mTOR; Stem Cell/Wnt
Solubility:	DMSO : ≥ 50 mg/mL (187.74 mM)



BIOLOGICAL ACTIVITY:

Honokiol is a bioactive, biphenolic phytochemical that possesses potent antioxidative, anti-inflammatory, antiangiogenic, and anticancer activities by targeting a variety of signaling molecules. It inhibits the activation of **Akt**. Honokiol can readily cross the blood brain barrier^{[1][2][3][4]}. **In Vitro:** Honokiol (0, 12.5, 25 and 50 μM) inhibits the growth of GBM cells and induces apoptosis, with IC₅₀ of appr against 30 μM DBTRG-05MG cell. Honokiol-induced apoptosis of GBM cells is associated with the downregulation of the Rb protein and cleavage of PARP and Bcl-x (S/L). Honokiol (50 μM) increases the level of autophagy markers in GBM cells^[1]. Honokiol has anticancer effect, and the IC₅₀ values with MDA-MB-231, MDA-MB-468, and MDA-MB-453 cell lines is 16.99 ± 1.28 μM, 15.94 ± 2.35 μM and 20.11 ± 3.13 μM respectively. Honokiol (3, 10 μM) produces significant inhibition on the spheroid number and spheroid sizes in the clonogenic assay^[2]. Honokiol (0.1-1.0 μM) specifically inhibits washed human platelet aggregation stimulated by collagen, but not by other agonists. honokiol (0.6 and 1.0 μM) can concentration-dependently inhibit the collagen-induced ATP-release reaction in washed human platelets. Honokiol specifically inhibits platelet aggregation and the phosphorylation of Lyn, PLCγ2, and PKC stimulated with convulxin. Honokiol (5, 10 μM) significantly inhibits convulxin-stimulated MAPKs and Akt activation^[3]. **In Vivo:** Honokiol-NM (40 mg/kg, p.o.) produces superior anticancer effects, and the PCNA, Cyclin D1 and cleaved caspase 3 expressions are 2.12, 1.92 and 1.68-fold significantly altered in this treated group^[2].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: Honokiol is dissolved in DMSO.^[2]In cytotoxicity assays, 10,000 cells/well are added to 96 wells plates and incubated overnight, thereafter cells are treated with different concentrations of Honokiol dissolved in dimethylsulphoxide (DMSO). Since Honokiol is not soluble in aqueous solvents, for in vitro studies Honokiol is dissolved in DMSO. To study the possible effect of DMSO on cells, solvent (DMSO) control is used at highest concentration of <0.1%. After 72 h treatment, cells are fixed and cell viability is measured by crystal violet staining (0.05%). **Animal Administration:** ^[2]For anticancer in vivo studies, the MDA-MB-231 cells (2 million) are injected into mammary fat tissue. Two weeks after the tumor cell injections, palpable tumors are observed in mammary tissues, which is an indication of tumor formation. Then drug treatment either in free form or in nanomicellar forms is given orally at the dose of 40 and 80 mg/kg daily. The drug treatment is continued for 4 weeks, and the tumor volumes and body weights are recorded weekly. After 4 weeks of treatment, animals are sacrificed; final tumor volumes and weights are measured. These tumors are used for western blot and immunohistochemical analysis. For western blot experiments, tumor tissues are stored at -80°C till the analysis is done. For IHC, tumors are fixed in formal saline.

References:

- [1]. Chang KH, et al. Honokiol-induced apoptosis and autophagy in glioblastoma multiforme cells. *Oncol Lett.* 2013 Nov;6(5):1435-1438.
- [2]. Godugu C, et al. Honokiol nanomicellar formulation produced increased oral bioavailability and anticancer effects in triple negative breast cancer (TNBC). *Colloids Surf B Biointerfaces.* 2017 Jan 23;153:208-219
- [3]. Lee TY, et al. Honokiol as a specific collagen receptor glycoprotein VI antagonist on human platelets: Functional ex vivo and in vivo studies. *Sci Rep.* 2017 Jan 5;7:40002
- [4]. Zhai H, et al. Honokiol-induced neurite outgrowth promotion depends on activation of extracellular signal-regulated kinases (ERK1/2). *Eur J Pharmacol.* 2005 Jun 1;516(2):112-7.

CAIndexNames:

[1,1'-Biphenyl]-2,4'-diol, 3',5'-di-2-propen-1-yl-

SMILES:

OC1=C(CC=C)C=C(C2=CC(CC=C)=CC=C2O)C=C1

Caution: Product has not been fully validated for medical applications. For research use only.

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