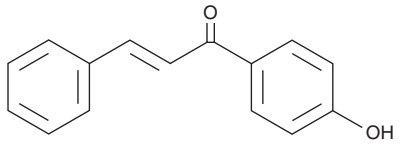
PRODUCT INFORMATION

4’-hydroxy Chalcone

Item No. 22898

CAS Registry No.: 2657-25-2
Formal Name: 1-(4-hydroxyphenyl)-3-phenyl-2-propen-1-one
Synonyms: 2-Benzal-4’-hydroxyacetophenone, 2-Benzylidene-4’-hydroxyacetophenone, *p*-Cinnamoylphenol, NSC 242264
MF: $C_{15}H_{12}O_2$
FW: 224.3
Purity: ≥98%
UV/Vis.: λ_{max}: 228, 322 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

4’-hydroxy Chalcone is supplied as a crystalline solid. A stock solution may be made by dissolving the 4’-hydroxy chalcone in the solvent of choice, which should be purged with an inert gas. 4’-hydroxy Chalcone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 4’-hydroxy chalcone in these solvents is approximately 30 mg/ml.

4’-hydroxy Chalcone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 4’-hydroxy chalcone should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 4’-hydroxy Chalcone has a solubility of approximately 0.2 mg/ml in a 1:4 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

4’-hydroxy Chalcone is a chalcone metabolite with diverse biological activities. It is formed when chalcone is metabolized by the cytochrome P450 (CYP) isoform CYP1A1 or CYP2C6.[1] 4’-hydroxy Chalcone is estrogenic in MCF-7 cells and is cytotoxic at concentrations higher than 100 nM. It inhibits TNF-α-induced NF-κB signaling and the trypsin-, chymotrypsin-, and caspase-like proteolytic activities of the 26S proteasome in K562 cells in a dose-dependent manner.[2] 4’-hydroxy Chalcone reduces growth of K562, U937, and Jurkat cancer cell lines in a dose-dependent manner without effecting viability of peripheral blood mononuclear cells (PBMCs). It also inhibits glutathione reductase (GSH-RD; IC_{50} = 47.3 µM) *in vitro* in a reversible and non-competitive manner.[3]

References

1. Kohno, Y., Kitamura, S., Sanoh, S., *et al.* Metabolism of the α,β-unsaturated ketones, chalcone and trans-4-phenyl-3-buten-2-one, by rat liver microsomes and estrogenic activity of the metabolites. *Drug Metab. Dispos.* **33(8)**, 1115-1123 (2005).
2. Orlikova, B., Tasdemir, D., Golais, F., *et al.* The aromatic ketone 4’-hydroxychalcone inhibits TNFα-induced NF-κB activation *via* proteasome inhibition. *Biochem. Pharmacol.* **82(6)**, 620-631 (2011).
3. Zhang, K., Yang, E.-B., Tang, W.-Y., *et al.* Inhibition of glutathione reductase by plant polyphenols. *Biochem. Pharmacol.* **54(9)**, 1047-1053 (1997).

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