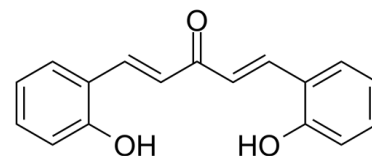


Data Sheet

Product Name:	2-HBA
Cat. No.:	CS-7985
CAS No.:	131359-24-5
Molecular Formula:	C ₁₇ H ₁₄ O ₃
Molecular Weight:	266.29
Target:	Caspase
Pathway:	Apoptosis
Solubility:	DMSO : 100 mg/mL (375.53 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

2-HBA is a potent inducer of **NAD(P)H:quinone acceptor oxidoreductase 1 (NQO1)** which can also activate **caspase-3** and **caspase-10**. IC₅₀ & Target: NQO1, caspase-3, caspase-10^[1] **In Vitro:** When L1210 cells are exposed to 0.6 μM 2-HBA (bis(2-hydroxybenzylidene)acetone), the specific activities of NQO1 and glutathione reductase increase by 6- and 1.5-fold, respectively. The total cellular glutathione content is also coordinately induced by 2.4-fold. In a more detailed study it is found that NQO1 is induced by 2-HBA in a concentration-dependent manner. Treatments with 2-HBA cause cell cycle arrest and apoptosis in both L1210 wild type cells and their Y8 drug-resistant counterparts in a concentration-dependent manner. 2-HBA can also activate caspase-3 and caspase-10^[1].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase Assay: ^[1]Cells (20,000 per well) are grown for 24 h in 96-well plates, then exposed to 2-HBA (bis(2-hydroxybenzylidene)acetone) for either 24 h (for glutathione determination) or 48 h (for determination of enzyme activities). At the end of the exposure period, cells are collected by centrifugation (1500×g for 15 min at 4°C), washed with DPBS, and finally lysed in 0.08% digitonin. An aliquot (25 μL) is used for protein analysis. Activity of NQO1 is determined by the Prochaska test^[1]. **Cell Assay:** ^[1]After exposure to 2-HBA (bis(2-hydroxybenzylidene)acetone) for 24 h, duplicate aliquots of cells (1×10⁶) are collected by centrifugation and washed with cold DPBS. Apoptosis is determined using the Annexin-V-FLUOS assay with simultaneous determination of the necrotic fraction by the uptake of propidium iodide^[1].

References:

[1]. Dinkova-Kostova AT, et al. Bis(2-hydroxybenzylidene)acetone, a potent inducer of the phase 2 response, causes apoptosis in mouse leukemia cells through a p53-independent, caspase-mediated pathway. Cancer Lett. 2007 Jan 8;245(1-2):341-9.

CAIndexNames:

1,4-Pentadien-3-one, 1,5-bis(2-hydroxyphenyl)-, (1E,4E)-

SMILES:

O=C(/C=C/C1=CC=CC=C1O)/C=C/C2=CC=CC=C2O

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

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