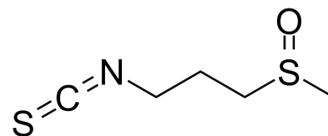


Iberin

Cat. No.:	HY-101413
CAS No.:	505-44-2
Molecular Formula:	C ₅ H ₉ NOS ₂
Molecular Weight:	163.26
Target:	Apoptosis; Endogenous Metabolite; Bacterial
Pathway:	Apoptosis; Metabolic Enzyme/Protease; Anti-infection
Storage:	Solution, -20°C, 2 years



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (612.52 mM; Need ultrasonic) Ethanol : 10 mg/mL (61.25 mM; Need ultrasonic)
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (15.31 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (15.31 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (15.31 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Iberin (NSC 321801), a sulfoxide analogue of sulforaphane, is a naturally occurring member of isothiocyanate family. Iberin inhibits cell survival with an IC ₅₀ of 2.3 μM in HL60 cell. Iberin induces apoptosis.
IC ₅₀ & Target	Human Endogenous Metabolite
In Vitro	<p>Iberin inhibits the growth of neuroblastoma cells in a dose- and time-dependent manner. The iberin-induced cell cycle arrest in neuroblastoma cells is associated with inhibition of expression of cyclin-dependent kinase Cdk2, Cdk4, and Cdk6 proteins. There is an increase in apoptotic cell death in iberin treated cells as compared with control cells. The iberin-induced apoptosis is found to be associated with activation of caspase-9, caspase-3, and PARP^[2]. Iberin inhibits growth of human glioblastoma cells in cell proliferation assays, enhances cytotoxicity, and induces apoptosis by activation of caspase-3 and caspase-9^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Iberin is tested in an in vivo foreign-body infection mouse model, and the results show no significantly difference in bacterial clearance between treated and nontreated miced^[4]. Iberin increases tissue levels of the phase II detoxification enzymes quinone reductase and glutathione S-transferase in a variety of rat tissues^[5].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

PROTOCOL

Cell Assay ^[2]

Cells are plated at a density of 1×10^5 cells/well in microtiter plates and treated with different concentrations of iberin (1, 2.5, 10 and 25 μ M). Then 20 μ L of 5 mg/mL MTT in PBS, is added to each well and allowed to incubate for a further 4 h. After 4 h of incubation, 100 μ L of DMSO is added to each well to dissolve the formazan crystals. Absorbance values at 550 nm are measured with a microplate reader^[2].

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Animal Administration ^{[4][5]}

Rats: Groups of five rats are dosed by oral intubation with the test compounds, as solutions in soybean oil, each day for 5 days. This doses used are 4.0 mg/kg/day for AITC, 5.9 mg/kg/day for iberiverin, 6.5 mg/kg/day for iberin, 6.4 mg/kg/day for erucin, 7.1 mg/kg/day for sulforaphane, and 7.2 mg/kg/day for cheirolin. The volume of solution administered is 2 mL/kg in all cases. Ten control rats are dosed with soybean oil alone^[5].

Mice: Iberin is diluted in 96% ethanol to a concentration of 32 mg/mL followed by a 40x dilution in 0.9% NaCl. The mice are injected with 0.2 mL of the final solution, corresponding to 8 μ g/g of body weight. The placebo group is injected with a 2.4% ethanol solution (96% ethanol–0.9% NaCl) corresponding to the amount of ethanol that the iberin-treated group received. Mice are treated every 12 h from day 2 preinsertion to day 2 postinsertion, and treatment is continued until 12 h before the mice are euthanized^[4].

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CUSTOMER VALIDATION

- Biomed Pharmacother. 2021 Jun 17;111533.

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REFERENCES

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- [5]. Munday R, et al. Induction of phase II detoxification enzymes in rats by plant-derived isothiocyanates: comparison of allyl isothiocyanate with sulforaphane and related compounds. *J Agric Food Chem.* 2004 Apr 7;52(7):1867-71.

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

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