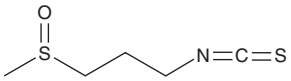
PRODUCT INFORMATION

Iberin

Item No. 14016

CAS Registry No.: 505-44-2
Formal Name: 1-isothiocyanato-3-(methylsulfinyl)-propane
Synonym: NSC 321801
MF: $C_5H_9NOS_2$
FW: 163.3
Purity: ≥95%
UV/Vis.: λ_{max}: 246 nm
Supplied as: A 10 mg/ml solution in ethanol
Storage: -80°C
Stability: ≥4 years



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

Laboratory Procedures

Iberin is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of iberin in these solvents is approximately 16 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of iberin is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of iberin in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Iberin is a natural isothiocyanate found in cruciferous plants.[1] When introduced into the daily diet of rats or added to rat hepatocytes (40 µM), it induces the expression of phase II detoxification enzymes, including quinone reductase and glutathione S-transferase.[1,2] In addition, iberin activates the nuclear factor E_2-related protein Nrf2, which promotes the expression of antioxidant and phase II genes.[2,3] Iberin also induces the apoptosis of some cancer cell lines.[3,4] Interestingly, iberin also acts as a quorum sensing inhibitor, blocking acyl-homoserine lactone signaling in *P. aeruginosa* without affecting growth (IC_{50} = 31-62 µM).[5]

References

1. Munday, R. and Munday, C.M. *J. Agric. Food. Chem.* **52(7)**, 1867-1871 (2004).
2. La Marca, M., Beffy, P., Della Croce, C., *et al. Food Chem. Toxicol.* **50(8)**, 2822-2830 (2012).
3. Barrera, L.N., Cassidy, A., Wang, W., *et al. Biochim. Biophys. Acta* **1823(10)**, 1914-1924 (2012).
4. Jadhav, U., Ezhilarasan, R., Vaughn, S.F., *et al. Int. J. Mol. Med.* **19(3)**, 353-361 (2007).
5. Jakobsen, T.H., Bragason, S.K., Phipps, R.K., *et al. Appl. Environ. Microbiol.* **78(7)**, 2410-2421 (2012).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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