

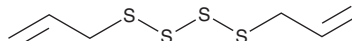
PRODUCT INFORMATION



Diallyl Tetrasulfide

Item No. 29328

CAS Registry No.: 2444-49-7
Formal Name: di-2-propen-1-yl tetrasulfide
Synonym: ICD-1585
MF: $C_6H_{10}S_4$
FW: 210.4
Purity: $\geq 90\%$
UV/Vis.: λ_{max} : 212, 265 nm
Supplied as: A 5 mg/ml solution in ethanol
Storage: $-20^\circ C$
Stability: ≥ 4 years
Item Origin: Synthetic



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

Laboratory Procedures

Diallyl tetrasulfide 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 ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of diallyl tetrasulfide in these solvents is approximately 30 mg/ml.

Diallyl tetrasulfide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of diallyl tetrasulfide should be diluted with the aqueous buffer of choice. Diallyl tetrasulfide has a solubility of 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Diallyl tetrasulfide is an organosulfur compound that has been found in *A. sativum* and has diverse biological activities, including antimicrobial, antioxidant, and anticancer properties.¹⁻⁴ It is active against the bacteria *S. aureus* and methicillin-resistant *S. aureus* (MRSA; MICs = 0.5 and 2 mg/L, respectively), as well as the fungi *C. albicans*, *C. krusei*, *C. glabrata*, *A. niger*, *A. flavus*, and *A. fumigatus* (MICs = 0.5, 4, 2, 1, 2, and 4 mg/L, respectively).¹ It reduces cadmium-induced increases in hepatic levels of thiobarbituric acid reactive substances (TBARS) and increases cadmium-induced decreases in the hepatic activity of superoxide dismutase (SOD1), catalase, GST, and glucose-6-phosphate dehydrogenase (G6PDH) in rats when administered at a dose of 40 mg/kg.² Diallyl tetrasulfide is cytotoxic to MCF-7 breast cancer cells (IC_{50} = 92 μM) and reduces tumor growth in a BGC-823 mouse xenograft model when administered at doses of 20, 30, and 40 mg/kg for 32 days.^{3,4}

References

1. Tsao, S.-M. and Yin, M.-C. In-vitro antimicrobial activity of four diallyl sulphides occurring naturally in garlic and Chinese leek oils. *J. Med. Microbiol.* **50**(7), 646-649 (2001).
2. Murugavel, P. and Pari, L. Effects of diallyl tetrasulfide on cadmium-induced oxidative damage in the liver of rats. *Hum. Exp. Toxicol.* **26**(6), 527-534 (2007).
3. Viry, E., Anwar, A., Kirsch, G., et al. Antiproliferative effect of natural tetrasulfides in human breast cancer cells is mediated through the inhibition of the cell division cycle 25 phosphatases. *Int. J. Oncol.* **38**(4), 1103-1111 (2011).
4. Jiang, X.-Y., Zhu, X.-S., Xu, H.-Y., et al. Diallyl trisulfide suppresses tumor growth through the attenuation of Nrf2/Akt and activation of p38/JNK and potentiates cisplatin efficacy in gastric cancer treatment. *Acta Pharmacol. Sin.* **38**(7), 1048-1058 (2017).

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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