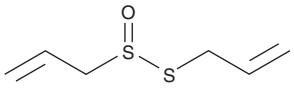
PRODUCT INFORMATION

Allicin

Item No. 15570

CAS Registry No.: 539-86-6
Formal Name: 2-propene-1-sulfinothioic acid, S-2-propen-1-yl ester
Synonym: Diallyl Thiosulfinate
MF: $C_6H_{10}OS_2$
FW: 162.3
Purity: ≥95%
Supplied as: A solution in methanol:water:formic acid
Storage: -80°C
Stability: ≥2 years



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

Laboratory Procedures

Allicin is supplied as a solution in methanol:water:formic acid. To change the solvent, simply evaporate the methanol:water:formic acid solution under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol and chloroform purged with an inert gas can be used.

Description

Allicin is a natural product originally isolated from *A. sativum* that has wide-ranging biological effects including antioxidative, anticancer, antimicrobial, and antifungal activities.[1-4] It inhibits the cysteine proteases cathepsin B and L, facipain 2, and rhodesain with K_i values of 8.6 and 9.3, 1.04, and 5.31 µM, respectively.[5] It shows antiparasitic activity against *P. falciparum* (IC_{50} = 5.2 µM) and *T. b. brucei* (IC_{50} = 13.8 µM), the parasites that cause malaria and African sleeping sickness, respectively. Allicin (5-10 µM) dose-dependently inhibits cell adhesion, invasion, and migration in various lung adenocarcinoma cell lines.[2] It also alters the balance of tissue inhibitors of matrix metalloproteinases (TIMPs) and matrix metalloproteinases (MMPs), decreases phosphorylation of Akt, and decreases PI3K/Akt signaling.

References

1. Chan, J.Y., Yuen, A.C., Chan, R.Y., *et al.* A review of the cardiovascular benefits and antioxidant properties of allicin. *Phytother. Res.* **27(5)**, 637-646 (2013).
2. Huang, L., Song, Y., Lian, J., *et al.* Allicin inhibits the invasion of lung adenocarcinoma cells by altering tissue inhibitor of metalloproteinase/matrix metalloproteinase balance *via* reducing the activity of phosphoinositide 3-kinase/AKT signaling. *Oncol. Lett.* **14(1)**, 468-474 (2017).
3. Ankri, S. and Mirelman, D. Antimicrobial properties of allicin from garlic. *Microbes Infect.* **(1)2**, 125-129 (1999).
4. Burian, J.P., Sacramento, L.V.S., and Carlos, I.Z. Fungal infection control by garlic extracts (*Allium sativum* L.) and modulation of peritoneal macrophages activity in murine model of sporotrichosis. *Braz. J. Biol.* (2017).
5. Waag, T., Gelhaus, C., Rath, J., *et al.* Allicin and derivates are cysteine protease inhibitors with antiparasitic activity. *Bioorg. Med. Chem. Lett.* **20(18)**, 5541-5543 (2010).

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