

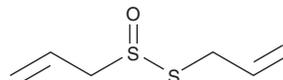
# PRODUCT INFORMATION



## 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<sub>6</sub>H<sub>10</sub>OS<sub>2</sub>  
**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.<sup>1-4</sup> It inhibits the cysteine proteases cathepsin B and L, facipain 2, and rhodesain with K<sub>i</sub> values of 8.6 and 9.3, 1.04, and 5.31 μM, respectively.<sup>5</sup> It shows antiparasitic activity against *P. falciparum* (IC<sub>50</sub> = 5.2 μM) and *T. b. brucei* (IC<sub>50</sub> = 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.<sup>2</sup> 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 derivatives are cysteine protease inhibitors with antiparasitic activity. *Bioorg. Med. Chem. Lett.* **20(18)**, 5541-5543 (2010).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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