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# Produktinformation

- Forschungsprodukte & Biochemikalien
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- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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See the following pages for more information!

## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


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# Diallyl disulfide

**Cat. No.:** HY-W015635

**CAS No.:** 2179-57-9

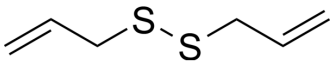
**Molecular Formula:** $C_6H_{10}S_2$

**Molecular Weight:** 146.27

**Target:** Others

**Pathway:** Others

**Storage:** 4°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (683.67 mM; Need ultrasonic)

| Preparing Stock Solutions | Concentration / Solvent / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 6.8367 mL | 34.1834 mL | 68.3667 mL |
| | 5 mM | 1.3673 mL | 6.8367 mL | 13.6733 mL |
| | 10 mM | 0.6837 mL | 3.4183 mL | 6.8367 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (17.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (17.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (17.09 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Diallyl disulfide, an active compound in garlic oil, is an orally active human squalene monooxygenase inhibitor with an $IC_{50}$ of 400 μM for squalene epoxidation. Diallyl disulfide exhibits obvious anti-inflammatory, anti-oxidative, antidepressant and anti-tumor activities[1][2][3][4].

**In Vitro**

Diallyl disulfide (30, 60, 120, 240 μM; 12, 24, 48 h) suppresses HT-29 cell growth[2].
Diallyl disulfide (30, 60, 120 μM; 24 h) induces cell cycle arrest in the G2/M-phase in HT-29 cells in a concentration-independent manner[2].
Diallyl disulfide (120 μM) induces the mRNA levels of ARPC3, SPINT2, SOD1, p21 and TACSTD2[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

| | |
|---|---|
| Cell Line: | HT-29 cells |
| Concentration: | 30, 60, 120 and 240 μM |
| Incubation Time: | 12, 24, 48 h |
| Result: | Suppressed HT-29 cell growth by 5.3, 23.1, 45.6 and 68.3% with 30, 60, 120 and 240 μM for 24 h, respectively. |

Cell Cycle Analysis[2]

| | |
|---|---|
| Cell Line: | HT-29 cells |
| Concentration: | 30, 60, 120 μM |
| Incubation Time: | 24 h |
| Result: | The percentage of cells in the G2/M-phase was found to be 23.6, 25.9, 39.7 and 61.0% with 30, 60, 120 and 240 μM, respectively. |

RT-PCR[2]

| | |
|---|---|
| Cell Line: | HT-29 cells |
| Concentration: | 120 μM |
| Incubation Time: | |
| Result: | The mRNA levels of ARPC3, SPINT2, SOD1, p21 and TACSTD2 were 3.52-, 7.98-, 15.6-, 13.47- and 5.92-fold higher than those in the primary cultured cells, respectively. |

**In Vivo**

Diallyl disulfide (40, 80 mg/kg; IP; pre-treatment 1 h) has a prophylactic effect in LPS-induced depression-like behaviors in mice[3].

Diallyl disulfide (30, 60, 90 mg/kg; oral gavage; three times/week for the last 30 days) dose-dependently reduces cigarette smoke (CS) -induced leukocyte infiltration into the airways and improves lung histology in C57BL/6 mice were exposed to CS for 60 consecutive days[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | Male C57BL6/J mice (6-8 weeks)[3] |
| Dosage: | 40, 80 mg/kg |
| Administration: | IP; pre-treatment 1 h before a single LPS injection (100 μg/kg) |
| Result: | Prevented LPS-induced increases in immobility time in the TST and FST in mice.<br>Did not affect the locomotor activity in mice with or without LPS treatment. |

## CUSTOMER VALIDATION

- bioRxiv. 2024 August 18.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. You-Sheng Huang, et al. Diallyl disulfide inhibits the proliferation of HT-29 human colon cancer cells by inducing differentially expressed genes. Mol Med Rep. 2011 May-Jun;4(3):553-9.

[2]. Xiaoyou Wei, et al. Acute Diallyl Disulfide Administration Prevents and Reveres Lipopolysaccharide-Induced Depression-Like Behaviors in Mice via Regulating Neuroinflammation and Oxido-Nitrosative Stress. Inflammation. 2021 Aug;44(4):1381-1395.

[3]. Aline de Oliveira Pontes Cardoso, et al. Diallyl disulfide prevents cigarette smoke-induced emphysema in mice. Pulm Pharmacol Ther. 2021 Aug:69:102053.

[4]. Gupta N, et al. Garlic and garlic-derived compounds inhibit human squalene monooxygenase. J Nutr. 2001;131(6):1662-1667.



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