Product Datasheet

Diallyl Trisulfide

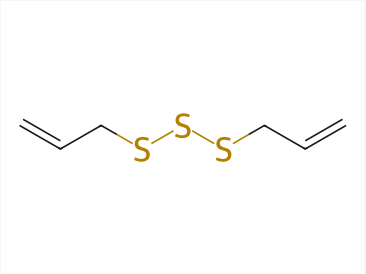
Catalog No. **BP-08915** · CAS **2050-87-5** · Form **free base** · Physical state **other** · Color **Colorless to light yellow** · Version **1.0** · Revision **2026-11-16**

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Target
Reactive Oxygen Species (ROS); Fungal; Apoptosis; SOD; Bcl-2 Family; Influenza Virus; Interleukin Related

Molecular formula	$C_6H_{10}S_3$
Molecular weight	**178.3470**

STRUCTURE



DESCRIPTION

Diallyl Trisulfide is an orally active anticancer agent that can be isolated from garlic. Diallyl Trisulfide has the ability to induce apoptosis and exhibits anticancer, anti-inflammatory, antioxidant, and antibacterial activities. Diallyl Trisulfide can be used to study a variety of cancers, including liver, colon and prostate cancer .

BIOLOGICAL ACTIVITY

In Vitro
Diallyl Trisulfide (25-100 μM; 24-72 h) induces apoptosis and inhibits cell proliferation in A549 cells, exhibiting anticancer activity[1].

Diallyl Trisulfide (5-10 μM; 1 h) significantly inhibits naphthalene (20 μM)-stimulated ROS generation and reduces the levels of inflammatory factors IL-6, TNF-α, and IL-8 by increasing superoxide dismutase (SOD) activity, thereby possessing antioxidant and anti-inflammatory activities[2].

Diallyl Trisulfide (93.75-375 μM; 24 h) attenuates H9N2 avian influenza virus (AIV) infection in human lung A549 epithelial cells, demonstrating antiviral activity[3].

Diallyl Trisulfide inhibits the growth of Penicillium expansum with antifungal activity (minimum fungicidal concentration (MFC)99 value: ≤ 90 μg/mL)[4].
In Vivo
Diallyl Trisulfide (6 μM/animal; Oral gavage, every other day for 30 days) inhibits tumor growth and exhibits anticancer activity in BALB/c nude mice[1].

Diallyl Trisulfide (20-80 mg/kg; Oral gavage, single dose) demonstrates antioxidant and anti-inflammatory activities in Kunming mice induced by naphthalene (100 mg/kg; orally, single dose)[2].

Diallyl Trisulfide (30 mg/kg; intraperitoneal injection; once daily for 2 weeks) reduces lung edema and inflammation caused by H9N2 AIV infection in BABL/c mice, exhibiting antiviral activity[3].

SOLUBILITY

Soluble in DMSO : 50 mg/mL

REFERENCES

[1]. Li W, et al. Diallyl trisulfide induces apoptosis and inhibits proliferation of A549 cells in vitro and in vivo. Acta Biochim Biophys Sin (Shanghai). 2012 Jul;44(7):577-83.

[2]. Zhang F, et al. Diallyl trisulfide inhibits naphthalene-induced oxidative injury and the production of inflammatory responses in A549 cells and mice. Int Immunopharmacol. 2015 Dec;29(2):326-333.

[3]. Ming L, et al. Antiviral activity of diallyl trisulfide against H9N2 avian influenza virus infection in vitro and in vivo. Virol J. 2021 Aug 19;18(1):171.

[4]. Pu Liu, et al. Diallyl trisulfide (DATS) effectively induced apoptosis of postharvest diseasePenicillium expansum of citrus. Annals of Microbiology. December 2009, Volume 59, Issue 4, pp 675-679.