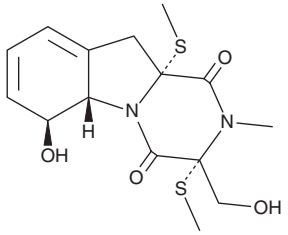
PRODUCT INFORMATION

Bis(methylthio)gliotoxin

Item No. 26271

CAS Registry No.:	74149-38-5
Formal Name:	(3R,5aS,6S,10aR)-2,3,5a,6,10,10a-hexahydro-6-hydroxy-3-(hydroxymethyl)-2-methyl-3,10a-*bis*(methylthio)-pyrazino[1,2-a]indole-1,4-dione
Synonyms:	Bisdethiobis(methylthio)gliotoxin, FR 49175
MF:	$C_{15}H_{20}N_2O_4S_2$
FW:	356.5
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°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

Bis(methylthio)gliotoxin is supplied as a solid. A stock solution may be made by dissolving the *bis*(methylthio)gliotoxin in the solvent of choice. *Bis*(methylthio)gliotoxin is soluble in organic solvents such as ethanol and DMSO, which should be purged with an inert gas. The solubility of *bis*(methylthio)gliotoxin in these solvents is approximately 25 mg/ml.

Description

Bis(methylthio)gliotoxin is a fungal metabolite originally isolated from *G. deliquescens* that has diverse biological activities.[1] It inhibits PAF- and collagen-induced platelet aggregation in rabbit platelet-rich plasma (IC_{50}s = 8.4 and 84.2 µM, respectively) but has no effect on arachidonic acid- or ADP-induced platelet aggregation (IC_{50}s = >400 µM).[2] *Bis*(methylthio)gliotoxin inhibits growth of HCT116 colon cancer cells (IC_{50} = 23.56 µM).[3] It inhibits PAF-induced bronchoconstriction in guinea pigs when administered at a dose of 0.1 mg/kg and is less toxic to mice (LD_{50} = >500 mg/kg) than gliotoxin (Item No. 11433).[2,4] *Bis*(methylthio)gliotoxin has been used as a serum biomarker in patients infected with invasive aspergillosis.[5]

References

1. Kirby, G.W., Robins, D.J., Sefton, M.A., *et al.* Biosynthesis of bisdethiobis (methylthio) gliotoxin, a new metabolite of *Gliocladium deliquescens*. *J. Chem. Soc. Perkin Trans. 1* **1(1)**, 119-121 (1980).
2. Okamoto, M., Yoshida, K., Uchida, I., *et al.* Studies of platelet activating factor (PAF) antagonists from microbial products. I. Bisdethiobis(methylthio)gliotoxin and its derivatives. *Chem. Pharm. Bull. (Tokyo)* **34(1)**, 340-344 (1986).
3. Rodrigues, B.S., Sahm, B.D., Jimenez, P.C., *et al.* Bioprospection of cytotoxic compounds in fungal strains recovered from sediments of the Brazilian coast. *Chem. Biodivers.* **12(3)**, 432-442 (2015).
4. Okamoto, M., Yoshida, K., Uchida, I., *et al.* Studies of platelet activating factor (PAF) antagonists from microbial products. II. Pharmacological studies of FR-49175 in animal models. *Chem. Pharm. Bull. (Tokyo)* **34(1)**, 345-348 (1986).
5. Domingo, M.P., Colmenarejo, C., Martínez-Lostao, L., *et al.* Bis(methyl)gliotoxin proves to be a more stable and reliable marker for invasive aspergillosis than gliotoxin and suitable for use in diagnosis. *Diagn. Microbiol. Infect. Dis.* **73(1)**, 57-64 (2012).

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