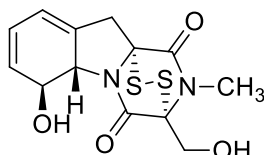


Gliotoxin

Code No.: **BIA-G1260**

Pack sizes: **1 mg, 5 mg**



Synonyms : Aspergillin, SN 12879, SN 12870

Specifications

CAS #	: 67-99-2
Molecular Formula	: C₁₃H₁₄N₂O₄S₂
Molecular Weight	: 326.4
Source	: Semi-synthetic
Appearance	: White powder
Purity	: >95% by HPLC
Long Term Storage	: -20°C
Solubility	: Soluble in ethanol, methanol, DMF or DMSO. Poor water solubility.

Application Notes

Gliotoxin is a potent epithiodioxopiperazine mycotoxin produced by species of Gliocladium, Aspergillus and Penicillium. At the cellular level gliotoxin inhibits a broad range of unrelated mechanisms, including inhibition of chymotrypsin-like activity of the 20S proteasome and Ca²⁺ release from mitochondria, activation of transcription factor NF-κB in response to a variety of stimuli in T and B cells, anti-inflammatory activity, and inhibition of farnesyltransferase and geranylgeranyltransferase. The mode of action appears to be via covalent interaction with proteins through mixed disulphide formation. Gliotoxin inhibits a number of thiol-requiring enzymes and also displays antioxidant and immunomodulatory activity.

References

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2. The epipolythiodioxopiperazine (ETP) class of fungal toxins: distribution, mode of action, functions and biosynthesis. Gardiner D. M. et al., Microbiology 2005, 151, 1021.
3. Gliotoxin is a dual inhibitor of farnesyltransferase and geranylgeranyltransferase I with antitumor activity against breast cancer in vivo. Vigushin D. M. et al., Med. Oncol. 2004, 21, 21.
4. The secondary fungal metabolite gliotoxin targets proteolytic activities of the proteasome. Kroll M, et al., Chem. Biol. 1999, 6, 689.
5. The immunosuppressive fungal metabolite gliotoxin specifically inhibits transcription factor NF-kappaB. Pahl, H. L. et al., J.Exp. Med. 1996, 183, 1829.
6. Gliotoxin stimulates Ca²⁺ release from intact rat liver mitochondria. Schweizer M. & Richter C. Biochemistry 1994, 33, 13401.