

<b>Product Name:</b>	Gliotoxin
<b>Product Number:</b>	G057
<b>CAS Number:</b>	67-99-2
<b>Molecular Formula:</b>	$C_{13}H_{14}N_2O_4S_2$
<b>Molecular Weight:</b>	326.0
<b>Appearance:</b>	White powder
<b>Storage Conditions:</b>	-20°C
<b>Description:</b>	<p>Gliotoxin is a potent epithiodioxopiperazine mycotoxin produced by species of Gliocladium, Aspergillus and Penicillium. Gliotoxin inhibits a number of thiol-requiring enzymes and displays antioxidant and immunomodulatory activity.</p> <p>Gliotoxin is soluble in ethanol, methanol, DMF or DMSO. Poor water solubility.</p>
<b>Mechanism of Action:</b>	<p>At the cellular level gliotoxin inhibits a broad range of unrelated mechanisms, including inhibition of chymotrypsin-like activity of the 20S proteasome and <math>Ca^{2+}</math> release from mitochondria, activation of transcription factor NF-<math>\kappa</math>B 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.</p>
<b>References:</b>	<p>Gliotoxin, the antibiotic principle of Gliocladium fimbriatum. I. Production, physical and biological properties. Johnson D. et al. JACS 1943, 65, 2005.</p> <p>The epipolythiodioxopiperazine (ETP) class of fungal toxins: distribution, mode of action, functions and biosynthesis. Gardiner D. M. et al. Microbiology 2005, 151, 1021.</p> <p>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.</p> <p>The secondary fungal metabolite gliotoxin targets proteolytic activities of the proteasome. Kroll M, et al. Chem. Biol. 1999, 6, 689.</p> <p>The immunosuppressive fungal metabolite gliotoxin specifically inhibits transcription factor NF-<math>\kappa</math>B. Pahl, H. L. et al. J.Exp. Med. 1996, 183, 1829.</p> <p>Gliotoxin stimulates <math>Ca^{2+}</math> release from intact rat liver mitochondria. Schweizer M. &amp; Richter C. Biochemistry 1994, 33, 13401.</p>

