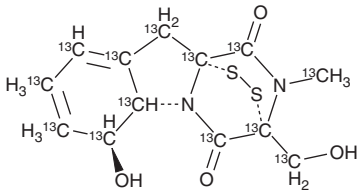
PRODUCT INFORMATION

Gliotoxin-$^{13}C_{13}$

Item No. 9003827

Formal Name:	(3R,5aS,6S,10aR)-6-hydroxy-3-(hydroxymethyl-^{13}C)-2-(methyl-^{13}C)-2,3,5a,6-tetrahydro-10H-3,10a-epidithiopyrazino[1,2-a]indole-1,4-dione-1,3,4,5a,6,7,8,9,9a,10,10a-$^{13}C_{11}$
Synonym:	Aspergillin-$^{13}C_{13}$
MF:	$[^{13}C]_{13}H_{14}N_2O_4S_2$
FW:	339.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 265 nm
Supplied as:	A solution in acetonitrile
Storage:	-20°C
Stability:	≥1 year



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Gliotoxin-$^{13}C_{13}$ is intended for use as an internal standard for the quantification of gliotoxin (Item No. 11433) by GC- or LC-MS. Gliotoxin is an immunosuppressive mycotoxin produced by pathogenic strains of *Aspergillus* and other fungi with diverse biological activities.[1-8] It inhibits 20S proteasomal chymotrypsin activity (IC_{50} = 10 µM), blocking the degradation of IκBα and preventing the activation of NF-κB.[2,3] Gliotoxin induces apoptosis in monocytes and dendritic cells and reduces phagocytosis by neutrophils.[4,5] It suppresses viral infection by Nipah and Hendra virus in HEK293T cells (IC_{50}s = 149 and 579 nM, respectively).[6] Under reducing conditions, gliotoxin inhibits leukotriene A_4 hydrolase (LTA_4H; Item No. 10007817) epoxide hydrolase activity, but not aminopeptidase activity, and leukotriene B_4 (LTB_4; Item No. 20110) synthesis in neutrophils and monocytes.[7] *In vivo*, gliotoxin (5 mg/kg) reduces LTB_4 plasma levels and blocks peritoneal neutrophil infiltration in a mouse model of peritonitis induced by zymosan A (Item No. 21175). It also inhibits geranylgeranyltransferase I and farnesyltransferase (IC_{50}s = 17 and 80 µM, respectively).[8]

References

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6. Aljofan, M., Sganga, M.L., Lo, M.K., *et al.* Antiviral activity of gliotoxin, gentian violet and brilliant green against Nipah and Hendra virus *in vitro*. *Virol. J.* **6**, 187 (2009).
7. König, Pace, S., Pein, H., *et al.* Gliotoxin from *Aspergillus fumigatus* abrogates leukotriene B_4 formation through inhibition of leukotriene A_4 hydrolase. *Cell. Chem. Biol.* **26(4)**, 524-534 (2019).
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