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DATASHEET

Disulfiram

Product overview

Name	Disulfiram
Cat No	HB1119
Alternative names	Tetraethylthiuram disulfide
Biological action	Inhibitor
Purity	>97%
Description	Reversibly stimulates SERCA Ca^{2+}-ATPase. V-ATPase inhibitor.

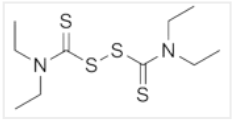
Biological Data

Biological description	Disulfiram reversibly stimulates SERCA Ca^{2+}-ATPase and inhibits V-ATPase (EC_{50} = 24.8 µM). It also inhibits aldehyde dehydrogenase and matrix metalloproteinases (MMP-2 and-9). It also inhibits multidrug resistant P-glycoprotein and concanamycin A-sensitive ATP-hydrolysis. It displays antifungal, anticancer, anti-alcohol activity and also shows antiviral activity. It inhibits the SARS-CoV-2 M^{pro} protease (IC_{50} = 9.35 µM) and inhibits viral replication in Vero cells.

Solubility & Handling

Storage instructions	+4°C
Solubility overview	Soluble in DMSO (20mM) and in ethanol (100mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	*Bis*(diethylthiocarbamoyl)disulfide
Molecular Weight	296.54
Chemical structure	
Molecular Formula	$C_{10}H_{20}N_2S_4$
CAS Number	97-77-8
PubChem identifier	3117
SMILES	CCN(CC)C(=S)SSC(=S)N(CC)CC
InChi	InChI=1S/C10H20N2S4/c1-5-11(6-2)9(13)15-16-10(14)12(7-3)8-4/h5-8H2,1-4H3
InChiKey	AUZONCFQVSMFAP-UHFFFAOYSA-N
MDL number	MFCD00009048

References

Identification of inhibitors of vacuolar proton-translocating ATPase pumps in yeast by high-throughput screening flow cytometry.

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Disulfiram suppresses invasive ability of osteosarcoma cells via the inhibition of MMP-2 and MMP-9 expression.

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Khan S *et al* (2007) Nihon Ishinkin Gakkai Zasshi 48(3)
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The ethanol metabolite acetaldehyde increases paracellular drug permeability in vitro and oral bioavailability in vivo.

Fisher SJ *et al* (2010) J Pharmacol Exp Ther 332(1)
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