

Certificate of Analysis

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Product Name: Disulfiram

Catalog No.: 3807

Batch No.: 2

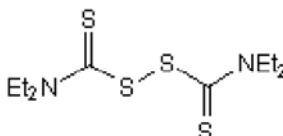
CAS Number: 97-77-8

EC Number: 202-607-8

IUPAC Name: *Bis*(diethylthiocarbamoyl)disulfide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₀H₂₀N₂S₄
Batch Molecular Weight: 296.54
Physical Appearance: Off-white solid
Solubility: DMSO to 20 mM
ethanol to 100 mM
Storage: Store at +4°C
Batch Molecular Structure:



2. ANALYTICAL DATA

¹H NMR: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	40.51	6.8	9.45
Found	40.4	6.85	9.39

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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IUPAC Name: Bis(diethylthiocarbonyl)disulfide

Description:

Inhibitor of aldehyde dehydrogenase that displays antialcoholism activity. Shown to reversibly stimulate Ca²⁺-ATPase activity and inhibit V-ATPase (EC₅₀ = 26 μM). Also inhibits expression of MMP-2 and MMP-9 and displays anti-invasive activity. Pyroptosis inhibitor; binds gasdermin D (GSDMD) and inhibits pore formation. Also inhibits SARS-CoV-2 main protease (M^{pro}; IC₅₀ = 9.35 μM) and inhibits viral replication in Vero cells *in vitro*.

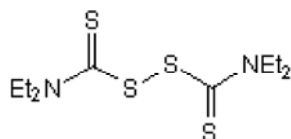
Physical and Chemical Properties:

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Solubility & Usage Info:

DMSO to 20 mM

ethanol to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Jin et al (2020) Structure of M^{pro} from SARS-CoV-2 and discovery of its inhibitors. *Nature* **582** 289. PMID: 32272481.

Pandeya et al (2019) Gasdermin D (GSDMD) as a new target for the treatment of infection. *Medchemcomm* **10** 660. PMID: 31191857.

Fisher et al (2010) The ethanol metabolite acetaldehyde increases paracellular drug permeability *in vitro* and oral bioavailability *in vivo*. *J.Pharmacol.Exp.Ther.* **332** 326. PMID: 19820208.

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