

Catalog Number: CM00111

产品信息

Catalog Number:
CM00111

CAS号:
97-77-8

分子式:
C₁₀H₂₀N₂S₄

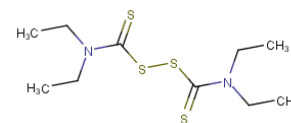
主要靶点:
Dehydrogenase|Pyroptosis|Interleukin

主要通路:
代谢|凋亡|免疫与炎症|免疫与炎症

分子量:
296.54

溶解度:

Ethanol:29.7 mg/mL (100.16 mM); DMSO:20 mg/mL (67.44 mM)



体外活性

方法: 9种人肿瘤细胞用 Disulfiram (0.1-2 μM) 处理 24 h, 使用 MTT 方法检测细胞活力。**结果:** Disulfiram 处理可降低实体瘤细胞系的生存能力 (MCF-7、MDA-MB-231、HBT-3、OVCAR3 和 U87), IC₅₀ < 0.8 μM。Disulfiram 也降低白血病细胞系的生存能力 (KG-1、U-937、NB4 和 Nalm6), IC₅₀ < 0.2 μM。[1] **方法:** 野生型 naïve CD8⁺ T 细胞用 Disulfiram (5 μM) 处理 2 h, 使用 Western Blot 方法检测靶点蛋白表达水平。**结果:** Disulfiram 可以在没有 TCR 交联刺激的情况下激活 S6 和 p70S6K 的磷酸化, 表明 Disulfiram 可以直接激活 TCR 通路的近端信号网络中的关键功能蛋白。[2]

体内活性

方法: 为检测体内抗肿瘤活性, 将 Disulfiram (10-50 mg/kg in 0.5% carboxymethyl cellulose sodium) 口服给药给携带小鼠黑色素瘤 B16F10 的 CD1 小鼠, 每天一次, 持续二十一天。**结果:** Disulfiram 治疗组的肿瘤体积显著减少, 死亡率显著降低。Disulfiram 直接激活 LCK 介导的 TCR 信号传导以诱导强大的抗肿瘤免疫。[2] **方法:** 为研究对啮齿类动物情绪行为的影响, 将 Disulfiram (40-80 mg/kg) 腹腔注射给 ICR 小鼠, 随后进行行为学研究。**结果:** Disulfiram 显著增加了在迷宫开放臂中花费的时间和开放臂进入的数量, 而不影响开放臂进入总数。Disulfiram 可能是一种有效的新型抗焦虑药物, 不会产生不良反应, 如健忘症、协调障碍或镇静。[3]

细胞实验

The effect of disulfiram (0.15-5.0 μM) or sodium diethyldithiocarbamate (1.0 μM) on proliferation of malignant cell lines is studied in cultures stimulated with 10% FBS. Cell numbers are quantitated 24 to 72 hours later, as outlined below. In some experiments, disulfiram is added immediately after cells are plated. In other experiments, cells are plated and allowed to grow for 24 to 72 hours before fresh medium with disulfiram is added and cell numbers are assayed 24 to 72 hours later. Synergy is studied between disulfiram and N,N'-bis(2-chloroethyl)-N-nitrosourea (carmustine, 1.0-1,000 μM) or cisplatin (0.1-100 μg/mL) added to medium. The effect of metal ions on disulfiram is studied with 0.2 to 10 μM Cu²⁺ (provided as CuSO₄), Zn²⁺ (as ZnCl₂), Ag⁺ (as silver lactate), or Au³⁺ (as HAuCl₄·3H₂O) ions added to growth medium, buffered to physiologic pH. To provide a biologically relevant source of copper, medium is supplemented with human ceruloplasmin at doses replicating low and high normal adult serum concentrations (250 and 500 mg/mL).

储存

Powder: -20°C for 3 years | In solvent: -80°C for 1 year | Shipping with blue ice.