

Product Data Sheet

Product Name: NSC 617145

Cat. No.: GC18507

Chemical Properties

Cas. No. 203115-63-3

Chemical Name 1,1'-(2,2-dimethyl-1,3-propanediyl)bis[3,4-dichloro-1H-pyrrole-2,5-dione

SMILES CC(CN(C(C(Cl)=C1Cl)=O)C1=O)(C)CN2C(C(Cl)=C(Cl)C2=O)=O

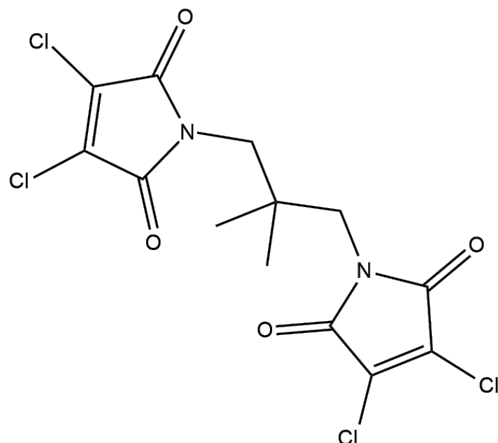
Formula $C_{13}H_{10}Cl_4N_2O_4$ M.Wt 400

Solubility 1mg/mL in DMSO, 2mg/mL in DMF Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines LMY1 cells

Caution: Product has not been fully validated for medical applications. For research use only.

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Preparation Method LMY1 cells were cultured in RPMI-1640 medium supplemented with penicillin, streptomycin and 10% fetal bovine serum (FBS). The cells were treated with NSC 617145 (0.02, 0.2, 2, and 20 μ M) or DMSO as a control. After 96 hours, the inhibition of cell growth was measured by cell counting.

Reaction Conditions 0.02, 0.2, 2, and 20 μ M; 96h

Applications NSC 617145 treatment significantly inhibited the cell proliferation of LMY1 cells.

References:

[1] Moles R, Bai X T, Chaib-Mezrag H, et al. WRN-targeted therapy using inhibitors NSC 19630 and NSC 617145 induce apoptosis in HTLV-1-transformed adult T-cell leukemia cells[J]. Journal of hematology & oncology, 2016, 9(1): 121.

Background

NSC 617145 is targeted inhibitor of werner syndrome helicase (WRN) helicase, with an IC₅₀ value of 230nM [1]. NSC 617145 can induce synthetic lethality via a genetic-based and/or chemically induced mechanism and render human cells deficient in the Fanconi Anemia (FA) pathway hypersensitive to the DNA cross-linking agent mitomycin C (MMC) in a WRN-dependent manner[2]. NSC 617145 has been widely used as an anti-cancer agent and has been applied in various cancer cell models to induce DNA damage[3].

In vitro, NSC 617145 treatment for 48 hours significantly inhibited the proliferation of PC3 cells, K562 cells, and HeLa cells, with IC₅₀ values of 184.6 $\pm$ 36.3, 20.3 $\pm$ 11.5, and 237.0 $\pm$ 120.2nM, respectively[4]. Treatment with 250nM NSC 617145 for 4 days significantly reduced the number of LMY1 cells and induced cell apoptosis[5]. NSC 617145 treatment for 48 hours exhibited significant cytotoxicity in normal human liver LX2 cells and normal human renal epithelial HK2 cells, with the IC₅₀ values of 1.81 $\pm$ 0.27 μ M and 5.64 $\pm$ 0.96 μ M, respectively [6].

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References:

- [1] Aggarwal M, Banerjee T, Sommers J A, et al. Werner syndrome helicase has a critical role in DNA damage responses in the absence of a functional fanconi anemia pathway[J]. Cancer research, 2013, 73(17): 5497-5507.
- [2] Datta A, Brosh Jr R M. New insights into DNA helicases as druggable targets for cancer therapy[J]. Frontiers in molecular biosciences, 2018, 5: 59.
- [3] Aggarwal M, Banerjee T, Sommers J A, et al. Targeting an Achilles' heel of cancer with a WRN helicase inhibitor[J]. Cell cycle, 2013, 12(20): 3329-3335.
- [4] Li H, Yu J, Yu G, et al. Design and synthesis of N-aryl-2-trifluoromethyl-quinazoline-4-amine derivatives as potential Werner-dependent antiproliferative agents[J]. Molecular Diversity, 2025, 29(1): 195-214.
- [5] Moles R, Bai X T, Chaib-Mezrag H, et al. WRN-targeted therapy using inhibitors NSC 19630 and NSC 617145 induce apoptosis in HTLV-1-transformed adult T-cell leukemia cells[J]. Journal of hematology & oncology, 2016, 9(1): 121.
- [6] Yu J, Yu G, Cheng S, et al. Quinazoline Derivative kzl052 Suppresses Prostate Cancer by Targeting WRN Helicase to Stabilize DNA Replication Forks[J]. International Journal of Molecular Sciences, 2025, 26(13): 6093.

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