

Product Data Sheet

Product Name: NSC697923

Cat. No.: GC11932

Chemical Properties

Cas. No. 343351-67-7

Chemical Name 2-(4-methylphenyl)sulfonyl-5-nitrofuran

SMILES CC1=CC=C(C=C1)S(=O)(=O)C2=CC=C(O2)[N+](=O)[O-]

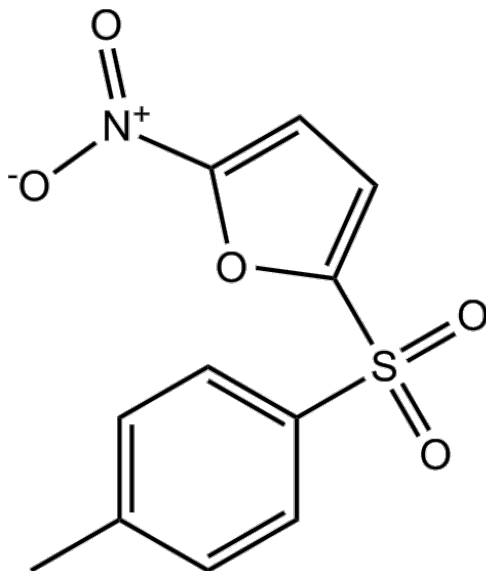
Formula $C_{11}H_9NO_5S$ M.Wt 267.26

Solubility Soluble in DMSO 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]:

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Cell lines A panel of neuroblastoma cell lines (including SH-SY5Y, IMR32, SK-N-AS, LA-N-6, NGP, NB19, CHLA-255)

Preparation Method Cells were treated with NSC697923 (0.1-0.5 μ M) for 24 hours.

Reaction
Conditions 0.1-0.5 μ M; 24h

Applications NSC697923 significantly induced apoptosis, inhibited cell proliferation and colony formation, promoted nuclear translocation of p53 in p53 wild-type cells, and activated JNK-mediated apoptotic pathway in p53 mutant cells.

Animal experiment [2]:

Animal models NSG SCID mice

Preparation Method Mice were injected subcutaneously with 150,000 A375 cells in both flanks. Mice were treated every other day for a total of 18 days with either solvent (0.5% DMSO and 30% Corn oil) or 5mg/kg NSC697923.

Dosage form 5mg/kg; i.p.; every other day for 18 days

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Applications NSC697923 treatment significantly reduced subcutaneous tumor growth, decreased total K63-Ub, reduced the number of Ki-67-positive proliferative cells, increased the number of cleaved caspase 3-positive apoptotic cells, decreased the expression of SOX10, Nestin and ABCB5, and increased the expression of p16.

References:

- [1] Chou J, Robinson TM, Egusa EA, et al. Synthetic Lethal Targeting of CDK12-Deficient Prostate Cancer with PARP Inhibitors. Clin Cancer Res. 2024 Dec 2;30(23):5445-5458.
- [2] Pérez-Peiró M, Valentí-Serra P, León-González B, et al. Attenuation of Tumor Burden in Response to Rucaparib in Lung Adenocarcinoma: The Contribution of Oxidative Stress, Apoptosis, and DNA Damage. Int J Mol Sci. 2023 Jan 30;24(3):2580.

Background

NSC697923 is a potent, cell-permeable UBE2N (ubiquitin-conjugating enzyme E2 N, Ubc13) inhibitor. NSC697923 induces cell death by promoting nuclear import of p53 or activating the JNK-mediated apoptotic pathway. NSC697923 can be used in studies related to neuroblastoma and diffuse large B-cell lymphoma (DLBCL)^[1-4].

In vitro, NSC697923 (0.5-2 μ M) was used to treat ABC-DLBCL cells, GCB-DLBCL cells, and primary DLBCL cells for 24 hours. NSC697923 significantly inhibited cell proliferation and survival, while inducing apoptosis^[5]. NSC697923 (0.1-0.5 μ M) was used to treat neuroblastoma cell lines (including SH-SY5Y, IMR32, SK-N-AS, LA-N-6, etc.) for 24 hours. NSC697923 significantly induced apoptosis, while inhibiting cell proliferation and colony formation^[6].

In vivo, NSC697923 (5mg/kg) was intraperitoneally injected every other day into NSG SCID mice bearing A375 xenograft tumors for 18 days. NSC697923 significantly reduced subcutaneous tumor growth^[7]. NSC697923 (3mg/kg; three times per week) combined with Ramipril (2mg/kg; three times per week) was intraperitoneally injected into STZ-induced diabetic DBA/2J mice for 6 weeks. NSC697923 significantly reduced the accumulation of K63-ubiquitinated proteins, renal fibrosis, and glomerulosclerosis^[8].

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References:

- [1] Gombodorj N, Yokobori T, Yoshiyama S, et al. Inhibition of Ubiquitin-conjugating Enzyme E2 May Activate the Degradation of Hypoxia-inducible Factors and, thus, Overcome Cellular Resistance to Radiation in Colorectal Cancer. *Anticancer Res.* 2017 May;37(5):2425-2436.
- [2] Hodge CD, Edwards RA, Markin CJ, et al. Covalent Inhibition of Ubc13 Affects Ubiquitin Signaling and Reveals Active Site Elements Important for Targeting. *ACS Chem Biol.* 2015 Jul 17;10(7):1718-28.
- [3] Zhang K, Zhao Y, Chen X, et al. p53 promote oxidative stress, neuroinflammation and behavioral disorders via DDIT4-NF- κ B signaling pathway. *Redox Biol.* 2025 Oct;86:103836.
- [4] Cao DY, Zhang ZH, Li RZ, et al. A small molecule inhibitor of caspase-1 inhibits NLRP3 inflammasome activation and pyroptosis to alleviate gouty inflammation. *Immunol Lett.* 2022 Apr;244:28-39.
- [5] Pulvino M, Liang Y, Oleksyn D, et al. Inhibition of proliferation and survival of diffuse large B-cell lymphoma cells by a small-molecule inhibitor of the ubiquitin-conjugating enzyme Ubc13-Uev1A. *Blood.* 2012 Aug 23;120(8):1668-77.
- [6] Cheng J, Fan YH, Xu X, et al. A small-molecule inhibitor of UBE2N induces neuroblastoma cell death via activation of p53 and JNK pathways. *Cell Death Dis.* 2014 Feb 20;5(2):e1079.
- [7] Dikshit A, Jin YJ, Degan S, et al. UBE2N Promotes Melanoma Growth via MEK/FRA1/SOX10 Signaling. *Cancer Res.* 2018 Nov 15;78(22):6462-6472.
- [8] Pontrelli P, Conserva F, Menghini R, et al. Inhibition of Lysine 63 Ubiquitination Prevents the Progression of Renal Fibrosis in Diabetic DBA/2J Mice. *Int J Mol Sci.* 2021 May 14;22(10):5194.

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