

Product Data Sheet

Product Name: WJ460
Cat. No.: GC38203

Chemical Properties

Cas. No. 1415251-36-3

SMILES O=C(NCCCCC1=CC=CC=C1)C2=CC=CC(C(N3C4=CC=CC=C4OC)SCC3=O)=C2

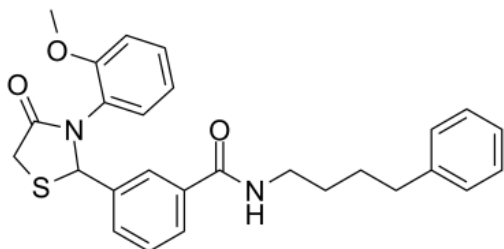
Formula C27H28N2O3S M.Wt 460.59

Solubility DMSO: 250 mg/mL (542.78 mM) 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	Pancreatic Cancer Cell Line 1 (PANC-1)
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Caution: Product has not been fully validated for medical applications. For research use only.

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Address: 10292 Central Ave. #205, Montclair, CA, USA

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Preparation method	PANC-1 cells were maintained in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% fetal bovine serum (FBS). Cells were cultured in a 37°C, 5% CO ₂ incubator. Cells were checked monthly for mycoplasma and used between passage 1 and 10. The cells culture were submitted to 50nM WJ460 during 24h.
Reaction Conditions	50nM ; 24h
Applications	WJ460 triggers a cell cycle arrest in G2/M phase and mitophagy
Animal experiment[2]:	
Animal models	Female nude mice BALB/c athymic nude mice
Preparation method	For the spontaneous metastasis model , MDA-MB-231- Luciferase cells (1×10^6) were injected in the #4 mammary fat pad of the mice. Lung metastasis was monitored weekly by an in vivo image system and histological examination.
Dosage form	10mg/kg ; 28 days ; intraperitoneal injection.
Applications	WJ460 caused significant inhibition of breast cancer pulmonary metastasis.

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References:

[1] RADEMAKER G, BOUMAHD Y, PEIFFER R, et al. Myoferlin targeting triggers mitophagy and primes ferroptosis in pancreatic cancer cells [J]. Redox Biol, 2022, 53(102324).

[2] ZHANG T, LI J, HE Y, et al. A small molecule targeting myoferlin exerts promising anti-tumor effects on breast cancer [J]. Nat Commun, 2018, 9(1): 3726.

Background

WJ460 is a potent myoferlin (MYOF) inhibitor, which interacts directly with MYOF [2]. WJ460 blocks breast cancer cell invasion with IC₅₀ values of 43.37±3.42nM in MDA-MB-231 [2]. However, WJ460 was inadequate in terms of metabolic stability and water solubility as well as binding activity with MYOF[3].

WJ460 (1μM, 24h) reduced Human T-cell leukemia virus type 1 (HTLV-1 infection), which was correlated with a reduction in the intracellular level of mature Env^[4]. WJ460 (50nM, 15h, 2Gy x-rays) treated HCT116 (cancer cell lines) spheroids were significantly radiosensitized as observed by a reduction in growth at day 15 post-seeding, compared with vehicle cells^[5].

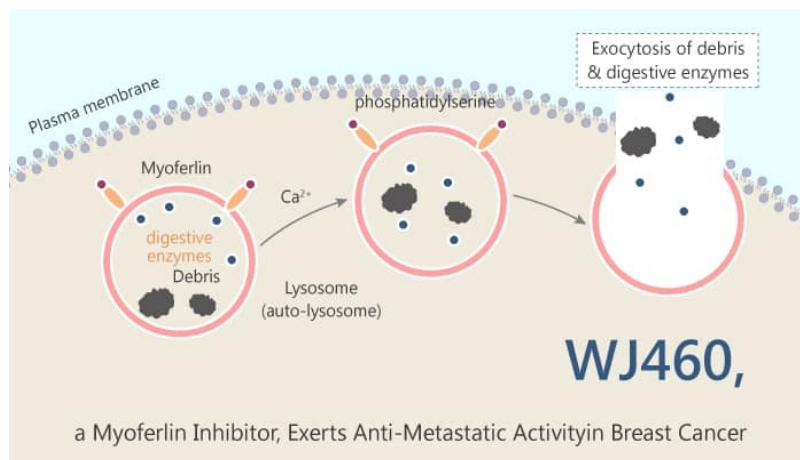
WJ460 (10mg/kg; 28 days; intraperitoneal injection) inhibits breast tumor growth, angiogenesis, and spontaneous metastasis in a mouse model^[2]. WJ460(10mg/kg; 4weeks; intraperitoneal injection) caused a reduction of the abundance of ferroptosis core regulators solute carrier family 7 member 11 (SLC7A11) and glutathione peroxidase 4 (GPX-4)^[1].

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WJ460, a myoferlin inhibitor, exerts anti-metastatic activity in breast cancer^[2].

References:

- [1] RADEMAKER G, BOUMAHD Y, PEIFFER R, et al. Myoferlin targeting triggers mitophagy and primes ferroptosis in pancreatic cancer cells [J]. Redox Biol, 2022, 53(102324).
- [2] ZHANG T, LI J, HE Y, et al. A small molecule targeting myoferlin exerts promising anti-tumor effects on breast cancer [J]. Nat Commun, 2018, 9(1): 3726.
- [3] GU H, ZHANG T, LI Y, et al. Discovery of 1,5-diaryl-1,2,4-triazole derivatives as myoferlin inhibitors and their antitumor effects in pancreatic cancer [J]. Future Med Chem, 2022, 14(20): 1425-40.
- [4] POLAKOWSKI N, SARKER M A K, HOANG K, et al. HBZ upregulates myoferlin expression to facilitate HTLV-1 infection [J]. PLoS Pathog, 2023, 19(2): e1011202.
- [5] FOWLER H, CLIFFORD R E, BOWDEN D, et al. Myoferlin: A Potential Marker of Response to Radiation Therapy and Survival in Locally Advanced Rectal Cancer [J]. Int J Radiat Oncol Biol Phys, 2024, 120(4): 1111-23.

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