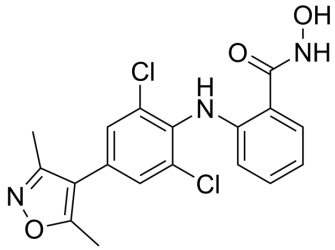
FB23-2

Cat. No.:	HY-127103
CAS No.:	2243736-45-8
Molecular Formula:	$C_{18}H_{15}Cl_2N_3O_3$
Molecular Weight:	392.24
Target:	Apoptosis
Pathway:	Apoptosis
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (63.74 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5495 mL	12.7473 mL	25.4946 mL
	5 mM	0.5099 mL	2.5495 mL	5.0989 mL
	10 mM	0.2549 mL	1.2747 mL	2.5495 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 50% PEG300 >> 50% saline
   Solubility: 10 mg/mL (25.49 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

FB23-2 is a potent and selective inhibitor of mRNA N^6-methyladenosine (m^6A) demethylase FTO, with an IC_{50} of 2.6 μM. FB23-2 has anti-proliferation activity. FB23-2 can be used for the research of acute myeloid leukemia (AML)[1].

IC_{50} & Target

IC50: 2.6 μM (FTO)[1]

In Vitro

FB23-2 dramatically suppresses proliferation and promotes the differentiation/apoptosis of human AML cell line cells and primary blast AML cells[1].
FB23 inhibits the proliferation of NB4 and MONOMAC6 cells, with IC_{50} values of 0.8 μM and 1.5 μM[1].
FB23-2 (20 μM; 72 hours) displays anti-proliferation effect via upregulating global m^6A levels[1].

FB23-2 (0.5-5 μM; 24-72 hours) significantly suppresses the proliferation of BM cells from these two models in a dose-dependent manner[1].
FB23-2 exhibits FTO-dependent anti-proliferation activity and promotes myeloid differentiation and apoptosis[1].
FB23-2 (1-20 μM; 72 hours) significantly increases the mRNA and protein levels of ASB2 and RARA in NB4 and MONOMAC6 cells[1].
FB23-2 induces apoptosis (1-20 μM; 48-72 hours) and cell cycle arrest (5-20 μM; 24 hours) at G1 stage in AML cells[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	MA9 cells, FLT3ITD/NPM1 cells (mouse BM cells)
Concentration:	0.5 μM, 2 μM, 5 μM
Incubation Time:	24 hours, 48 hours, 72 hours
Result:	Suppressed the proliferation of BM cells.

RT-PCR[1]

Cell Line:	NB4 cells, MONOMAC6 cells
Concentration:	1 μM, 5 μM , 20 μM
Incubation Time:	72 hours
Result:	Significantly increased ASB2 and RARA mRNA levels.

Apoptosis Analysis[1]

Cell Line:	NB4 cells, MONOMAC6 cells
Concentration:	1 μM, 5 μM , 20 μM
Incubation Time:	48 hours (NB4 cells),72 hours (MONOMAC6 cells)
Result:	Induced apoptosis.

Cell Cycle Analysis[1]

Cell Line:	MONOMAC6 cells
Concentration:	5 μM , 20 μM
Incubation Time:	24 hours
Result:	Induced cell cycle arrest at G1 stage.

In Vivo

FB23-2 (2 mg/kg; i.p.; daily; for 10 days) substantially suppresses leukemia progression and prolongs survival[1].
FB23-2 exhibits elimination half-life (rat 6.7 h) and C_{max} (rat 2421.3 ng/mL) following intraperitoneal injection (rat 3 mg/kg)[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	NOD/LtSz-scid IL2RG-SGM3 (NSGS) mice, xeno-transplanted with MONOMAC6 AML cells[1]
Dosage:	2 mg/kg
Administration:	Intraperitoneal injection, daily, for 10 days

Result:	Delayed the onset of full-blown leukemic symptoms and significantly prolonged survival by almost doubling the median survival.

Animal Model:	Sprague Dawley (SD) rats[1]
Dosage:	3 mg/kg (Pharmacokinetic Analysis)
Administration:	Intraperitoneal injection
Result:	$T_{1/2}$ (6.7 hours), C_{max} (2421.3 ng/mL).

CUSTOMER VALIDATION

- Mol Cancer. 2024 Sep 20;23(1):205.
- Nat Commun. 2024 Jun 4;15(1):4760.
- Adv Sci (Weinh). 2023 Oct 11:e2304895.
- J Hazard Mater. 2023 Dec 22:465:133329.
- J Hazard Mater. 2023 Jul 5,453,131354.

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REFERENCES

[1]. Huang Y, et al. Small-Molecule Targeting of Oncogenic FTO Demethylase in Acute Myeloid Leukemia. Cancer Cell. 2019 Apr 15;35(4):677-691.e10.

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