Melflufen hydrochloride

Cat. No.: HY-105019A

CAS No.: 380449-54-7

Molecular Formula: $C_{24}H_{31}Cl_3FN_3O_3$

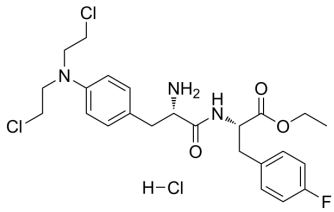
Molecular Weight: 534.88

Target: DNA Alkylator/Crosslinker; Apoptosis

Pathway: Cell Cycle/DNA Damage; Apoptosis

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 33.33 mg/mL (62.31 mM; Need ultrasonic)

H_2O : 1 mg/mL (1.87 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8696 mL	9.3479 mL	18.6958 mL
5 mM	0.3739 mL	1.8696 mL	3.7392 mL
10 mM	0.1870 mL	0.9348 mL	1.8696 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (4.67 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.67 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.67 mM); Clear solution
4. Add each solvent one by one: PBS
   Solubility: 1 mg/mL (1.87 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

Melflufen (Melphalan flufenamide) hydrochloride, a dipeptide proagent of Melphalan, is an alkylating agent. Melflufen hydrochloride shows antitumor activity against multiple myeloma (MM) cells and inhibits angiogenesis. Melflufen hydrochloride induces irreversible DNA damage and cytotoxicity in MM cells[1][2][3].

In Vitro

Melflufen (Melphalan flufenamide) hydrochloride (0.5-10 μM; 24 hours) decreases viability of MM.1S, INA-6, RPMI-8226, MM.1R, Dox-40, ARP-1, and ANBL-6 cells in a concentration-dependent manner[1].

Melflufen hydrochloride induces apoptosis in MM.1S cells[1].
Melflufen hydrochloride also is a potent activator of exosome secretion[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Multiple myeloma cells: MM.1S, INA-6, RPMI-8226, MM.1R, Dox-40, ARP-1, ANBL-6 cells
Concentration:	0.5, 1, 3, 5, 10 μM
Incubation Time:	24 hours
Result:	A significant concentration-dependent decrease in viability of all cell lines was observed.

In Vivo

Melflufen (Melphalan flufenamide) hydrochloride (3 mg/kg; i.v.; twice-weekly for two weeks) shows anti-MM activity in xenograft mouse model[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	CB-17 SCID mice (human plasmacytoma MM.1S xenograft mouse model)[1]
Dosage:	3 mg/kg
Administration:	1.v.; twice-weekly for two weeks
Result:	Significantly inhibited MM tumor growth and prolonged survival of mice.

CUSTOMER VALIDATION

- Cell Death Dis. 2022 Feb 10;13(2):136.

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REFERENCES

[1]. Chauhan D, et al. In vitro and in vivo antitumor activity of a novel alkylating agent, melphalan-flufenamide, against multiple myeloma cells. Clin Cancer Res. 2013;19(11):3019-3031.

[2]. Ray A, et al. A novel alkylating agent Melflufen induces irreversible DNA damage and cytotoxicity in multiple myeloma cells. Br J Haematol. 2016;174(3):397-409.

[3]. McAndrews KM, et, al. Mechanisms associated with biogenesis of exosomes in cancer. Mol Cancer. 2019 Mar 30;18(1):52.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA