Dacarbazine

Cat. No.: HY-B0078

CAS No.: 4342-03-4

Molecular Formula: $C_6H_{10}N_6O$

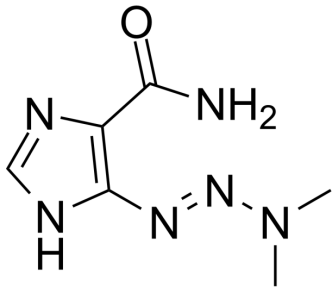
Molecular Weight: 182.18

Target: Nucleoside Antimetabolite/Analog; Apoptosis

Pathway: Cell Cycle/DNA Damage; Apoptosis

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

0.1 M HCL : 20 mg/mL (109.78 mM; ultrasonic and warming and heat to 60°C)

DMSO : 5 mg/mL (27.45 mM; ultrasonic and warming and heat to 60°C)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	5.4891 mL	27.4454 mL	54.8908 mL
	5 mM	1.0978 mL	5.4891 mL	10.9782 mL
	10 mM	0.5489 mL	2.7445 mL	5.4891 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: 5 mg/mL (27.45 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: PBS
   Solubility: 2 mg/mL (10.98 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

Dacarbazine is a nonspecific antineoplastic (antineoplastic) alkylating agent. Dacarbazine inhibits T and B lymphocyte responses with IC_{50} of 50 and 10 μg/mL, respectively. Dacarbazine can be used in the study of metastatic malignant melanoma[1][2][3][4][5].

In Vitro

Dacarbazine (6.25-500 μg/mL 48 h) combines with hyperthermia-induced cytotoxicity of A375 and MNT-1 melanoma cells[5].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[5]

Cell Line:	A375, MNT-1

Concentration:	6.25, 12.5, 25, 50, 100, 200, 400, 500 μg/mL
Incubation Time:	24, 48, 72 h
Result:	Inhibited cell viability in a concentration-dependent manner.

Cell Cycle Analysis[5]

Cell Line:	A375, MNT-1
Concentration:	5.5, 115 μg/mL
Incubation Time:	48 h
Result:	Decreased (9.3%) the percentage of A375 cells at the S phase and increased the number of cells at G2/M. Decreased MNT-1 cells at G0/G1, increasing in cells at both S and G2/M phases.

CUSTOMER VALIDATION

- Nature. 2023 Jun;618(7964):374-382.
- Theranostics. 2020 Jul 25;10(21):9477-9494.
- J Nanobiotechnology. 2023 Oct 19;21(1):383.
- Phytother Res. 2024 Mar 25.
- J Ethnopharmacol. 2024 Jan 12:117759.

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REFERENCES

[1]. Serrone, L., et al., Dacarbazine-based chemotherapy for metastatic melanoma: thirty-year experience overview. J Exp Clin Cancer Res, 2000. 19(1): p. 21-34.

[2]. Al-Badr AA, et al. Dacarbazine. Profiles Drug Subst Excip Relat Methodol. 2016;41:323-77.

[3]. Rojo JM, et al. Inhibition of T and B lymphoblastic response by mithramycin, dacarbazine, prospidium chloride and peptichemio. Chemotherapy. 1983;29(5):345-51.

[4]. Erdmann S, et al. Induced cross-resistance of BRAFV600E melanoma cells to standard chemotherapeutic dacarbazine after chronic PLX4032 treatment. Sci Rep. 2019 Jan 10;9(1):30.

[5]. Salvador D, et al. Combined Therapy with Dacarbazine and Hyperthermia Induces Cytotoxicity in A375 and MNT-1 Melanoma Cells. Int J Mol Sci. 2022 Mar 25;23(7):3586.

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