Oxaliplatin

Cat. No.: HY-17371

CAS No.: 61825-94-3

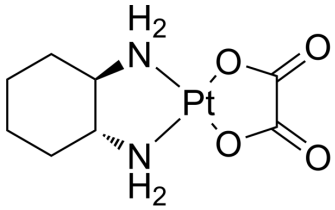
Molecular Formula: $C_8H_{14}N_2O_4Pt$

Molecular Weight: 397.29

Target: DNA/RNA Synthesis; 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

H_2O : 2.17 mg/mL (5.46 mM; ultrasonic and warming and heat to 60°C; DMSO can inactivate Oxaliplatin's activity)
DMF : 1.67 mg/mL (4.20 mM; Need ultrasonic; DMSO can inactivate Oxaliplatin's activity)
Ethanol : < 1 mg/mL (insoluble; DMSO can inactivate Oxaliplatin's activity)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5171 mL	12.5853 mL	25.1705 mL
	5 mM	0.5034 mL	2.5171 mL	5.0341 mL
	10 mM	---	---	---

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

In Vivo

1. Add each solvent one by one: 5% w/v Glucose Solution
   Solubility: 3.33 mg/mL (8.38 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: PBS
   Solubility: 1.92 mg/mL (4.83 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

Oxaliplatin is a DNA synthesis inhibitor. Oxaliplatin causes DNA crosslinking damage, prevents DNA replication and transcription and induces apoptosis. Oxaliplatin can be used for cancer research[1][2][3].

IC_{50} & Target

IC50: DNA synthesis[1]

In Vitro

Oxaliplatin (24-72 hours; 2-128 μM; HCC, HCCLM3 and Hep3B cells) inhibits cell growth and induces apoptosis[1].
?Oxaliplatin (10 μM; 15-240 mins; CEM cells) induces primary and secondary DNA lesions, including DNA cross-links (ISC) and DNA-protein cross-links (DPC)[2].
?Oxaliplatin (0.01 to 100 μM; 24 hours) potently inhibits bladder carcinoma cell lines RT4 and TCCSUP, ovarian carcinoma

cell line A2780, colon carcinoma cell line HT-29, glioblastoma cell lines U-373MG and U-87MG, and melanoma cell lines SK-MEL-2 and HT-144 with IC_{50} of 11 μM, 15 μM, 0.17 μM, 0.97 μM, 2.95 μM, 17.6 μM, 30.9 μM and 7.85 μM, respectively[3].

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

Cell Viability Assay[1]

Cell Line:	HCC, HCCLM3 and Hep3B cells
Concentration:	24, 48 and 72 hours
Incubation Time:	2, 4, 8, 16, 32, 64 and 128 μM
Result:	Decreased cell viability in a dose- and time-dependent manner.

Cell Cycle Analysis[1]

Cell Line:	HCCLM3 and Hep3B cells
Concentration:	10 μM
Incubation Time:	24 hours
Result:	Increased the percentage of apoptotic cells (17.70% for HCCLM3 cells; 21.19% for Hep3B cells).

Cell Cycle Analysis[1]

Cell Line:	HCCLM3 cells
Concentration:	10 μM
Incubation Time:	48 hours
Result:	Down-regulated the expression of Bcl-2 and Bcl-xL, and increased the expression of Bax.

In Vivo

Oxaliplatin (5-10 mg/kg; i.p.; for 32 days; nude mice) inhibits tumor growth[1].

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

Animal Model:	Nude mice[1]
Dosage:	5 and 10 mg/kg
Administration:	Intraperitoneal injection; for 32 days
Result:	Reduced tumor volume in HCCLM3 tumor xenografts.

CUSTOMER VALIDATION

- Nat Med. 2019 Sep;25(9):1428-1441.
- Signal Transduct Target Ther. 2022 Sep 12;7(1):317.
- Signal Transduct Target Ther. 2021 May 28;6(1):188.
- Cell Discov. 2022 Sep 14;8(1):92.
- Gastroenterology. 2021 Nov;161(5):1601-1614.e23.

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REFERENCES

[1]. Raymond E, et al. Oxaliplatin: a review of preclinical and clinical studies. Ann Oncol. 1998 Oct;9(10):1053-71.

[2]. Mohammed MQ, et al. Oxaliplatin is active in vitro against human melanoma cell lines: comparison with NSC 119875 and NSC 241240. Anticancer Drugs. 2000 Nov;11(10):859-63.

[3]. Pendyala L, et al. In vitro cytotoxicity, protein binding, red blood cell partitioning, and biotransformation of oxaliplatin. Cancer Res. 1993 Dec 15;53(24):5970-6.

[4]. Wang Z, et al. Oxaliplatin induces apoptosis in hepatocellular carcinoma cells and inhibits tumor growth. Expert Opin Investig Drugs. 2009 Nov;18(11):1595-604

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[8]. Yi Yao, et al. Comparative proteomic analysis of colon cancer cells in response to oxaliplatin treatment. Biochim Biophys Acta. 2009 Oct;1794(10):1433-40.

[9]. Garrett MJ, et, al. Capecitabine, Oxaliplatin, and Bevacizumab (BCapOx) Regimen for Metastatic Colorectal Cancer. Hosp Pharm. 2017 May;52(5):341-347.

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