6-Diazo-5-oxo-L-nor-Leucine

Cat. No.: HY-108357

CAS No.: 157-03-9

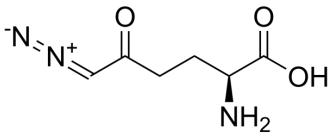
Molecular Formula: $C_6H_9N_3O_3$

Molecular Weight: 171.15

Target: Glutaminase; Bacterial; Influenza Virus; Antibiotic

Pathway: Metabolic Enzyme/Protease; Anti-infection

Storage: -20°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

H_2O : 25 mg/mL (146.07 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	5.8428 mL	29.2141 mL	58.4283 mL
	5 mM	1.1686 mL	5.8428 mL	11.6857 mL
	10 mM	0.5843 mL	2.9214 mL	5.8428 mL

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

BIOLOGICAL ACTIVITY

Description

6-Diazo-5-oxo-L-nor-Leucine (L-6-Diazo-5-oxonorleucine; DON) is a glutamine antagonist that irreversibly inhibits the catabolic effect of glutamine. 6-Diazo-5-oxo-L-nor-Leucine shows good anticancer activity (especially in pancreatic cancer) and reduces the self-renewal potential and metastatic capacity of tumour cells. 6-Diazo-5-oxo-L-nor-Leucine also possesses antibacterial and antiviral activity[1][2][3].

IC_{50} & Target

Bacterial[3].

In Vitro

6-Diazo-5-oxo-L-nor-Leucine (DON) (0.3 mM; 1 h) shows inhibition of glutamine catabolism in WI-L2 cells[1].
?6-Diazo-5-oxo-L-nor-Leucine (DON) decreases the selfrenewal potential and metastatic ability of tumor cell[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	WI-L2 cells
Concentration:	0.3 mM
Incubation Time:	1 h

	Result:	Inhibited the rapid catabolism of glutamine by the cultured human lymphoblast line WI-L2 greater than 95%.

In Vivo

6-Diazo-5-oxo-L-nor-Leucine sensitizes pancreatic tumors to anti-PD1 resulting in tumor regression and prolonged survival in vivo[2].

?6-Diazo-5-oxo-L-nor-Leucine decreases hyaluronan and collagen in the tumor microenvironment, leading to an extensive remodeling of the ECM (extensive extracellular matrix), and an increases infiltration $CD8^+$ T-cells[2].

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

CUSTOMER VALIDATION

- Adv Sci (Weinh). 2022 Oct;9(30):e2202993.
- Redox Biol. 2021 Jul;43:101994.
- Sci Total Environ. 2023 Jul 8;165348.
- Int J Biol Sci. 2022 Jun 21;18(10):4135-4150.
- Front Immunol. 2022 May 19;13:880262.

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REFERENCES

[1]. DeWald H A, et al. 6-diazo-5-oxo-l-norleucine, a new tumor-inhibitory substance. 1a preparation of l-, d-and dl-forms1b. Journal of the American Chemical Society, 1958, 80(15): 3941-3945.

[2]. Willis RC, et al. The inhibition by 6-diazo-5-oxo-l-norleucine of glutamine catabolism of the cultured human lymphoblast. J Cell Physiol. 1977 Dec;93(3):375-82.

[3]. Sharma NS, et al. Targeting tumor-intrinsic hexosamine biosynthesis sensitizes pancreatic cancer to anti-PD1 therapy. J Clin Invest. 2019 Oct 15.

Caution: Product has not been fully validated for medical applications. For research use only.

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