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Produktinformation

- Forschungsprodukte & Biochemikalien
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- Laborgeräte & Service

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See the following pages for more information!

Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Glycine

Cat. No.: HY-Y0966

CAS No.: 56-40-6

Molecular Formula: $C_2H_5NO_2$

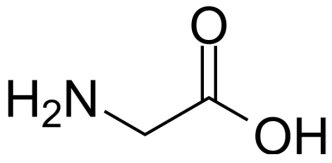
Molecular Weight: 75.07

Target: Endogenous Metabolite; iGluR; VEGFR; Small Interfering RNA (siRNA)

Pathway: Metabolic Enzyme/Protease; Membrane Transporter/Ion Channel; Neuronal Signaling; Protein Tyrosine Kinase/RTK; Epigenetics

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

H_2O : 25 mg/mL (333.02 mM; Need ultrasonic)

Methanol : < 1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	13.3209 mL	66.6045 mL	133.2090 mL
5 mM	2.6642 mL	13.3209 mL	26.6418 mL
10 mM	1.3321 mL	6.6605 mL	13.3209 mL

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

BIOLOGICAL ACTIVITY

Description

Glycine is an inhibitory neurotransmitter in the CNS and also acts as a co-agonist along with glutamate, facilitating an excitatory potential at the glutaminergic N-methyl-D-aspartic acid (NMDA) receptors. Glycine is orally active. Glycine can be used to study cell protection, cancer, neurological diseases, and angiogenesis[1][2][3][4][5][6].

IC_{50} & Target				
	NMDA Receptor	Human Endogenous Metabolite	Microbial Metabolite	NINJ1

In Vitro

Glycine (0-1 mM, 0-48 h) has anti-tumor and anti-angiogenic effects. It can downregulate the production of VEGF in tumor cells HCT-116, HT-29 and CC-531, inhibit the growth of endothelial cells HUVEC through GlyR, and indirectly inhibit HUVEC migration and capillary formation[3].

Glycine (5 mM, 50 mM, 10 min) can prevent the aggregation of NINJ1 in the plasma membrane and inhibit cell death caused by the breakdown of NINJ1 dependent property membrane, thereby exerting its cytoprotective effect[4].

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

Cell Migration Assay [3]

Cell Line:	HUVEC cells
Concentration:	0, 0.01, 0.1, or 1 mM
Incubation Time:	0-48 h
Result:	Reduced VEGF or conditioned medium-stimulated HUVEC migration and angiogenesis but had no direct effect on HUVEC migration.

In Vivo

Glycine (single 40-800 mg/kg, i.p.) dose-dependently prevents scopolamine (HY-N0296)-induced social cognitive impairment in adult rats[2].
Glycine (500 and 1000 mg/kg/day for 14 days, i.p.) can significantly reduce kidney damage in lead-exposed mice by inhibiting ROS production[5].
Glycine (single 1 or 2 g/kg, p.o.) increases extracellular serotonin but not dopamine in the prefrontal cortex of rats
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	renal injury in mice exposed to Pb, adult male BALB/c mice (25–30 g)[5]
Dosage:	500 and 1000 mg/kg/day for 14 days
Administration:	i.p.
Result:	Significantly reduces elevated serum BUN and creatinine levels due to lead exposure. Significantly reduced ROS elevation in renal tissue due to lead exposure. Mitigated renal histopathological alterations in mice exposed to lead, included tubular dilation, protein cast, vacuolization, and inflammation.

CUSTOMER VALIDATION

- Redox Biol. 2024 Mar 4:71:103112.
- Diabetologia. 2024 Jan 18.
- J Transl Med. 2024 Feb 21;22(1):192.
- Exp Brain Res. 2023 Oct 16.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Johnson JW, et al. Glycine potentiates the NMDA response in cultured mouse brain neurons. Nature. 1987 Feb 5-11;325(6104):529-31.

[2]. Fone KCF, et al. Comparative Pro-cognitive and Neurochemical Profiles of Glycine Modulatory Site Agonists and Glycine Reuptake Inhibitors in the Rat: Potential Relevance to Cognitive Dysfunction and Its Management. Mol Neurobiol. 2020 May;57(5):2144-2166.

[3]. Bruns H, et al. Glycine inhibits angiogenesis in colorectal cancer: role of endothelial cells. Amino Acids. 2016 Nov;48(11):2549-2558.

[4]. Borges JP, et al. Glycine inhibits NINJ1 membrane clustering to suppress plasma membrane rupture in cell death. Elife. 2022 Dec 5;11:e78609.

[5]. Shafiekhani M, et al. Glycine supplementation mitigates lead-induced renal injury in mice. J Exp Pharmacol. 2019 Feb 18;11:15-22.

[6]. Bannai M, et al. Oral administration of glycine increases extracellular serotonin but not dopamine in the prefrontal cortex of rats. Psychiatry Clin Neurosci. 2011 Mar;65(2):142-9.

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