N-Acetyl lysyltyrosylcysteine amide

Cat. No.: HY-125039

CAS No.: 1287585-40-3

Molecular Formula: $C_{20}H_{31}N_5O_5S$

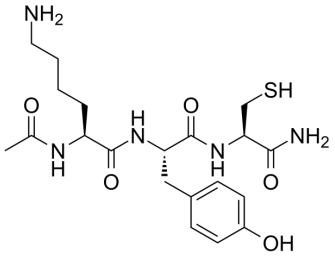
Molecular Weight: 453.56

Target: Glutathione Peroxidase

Pathway: Apoptosis; Metabolic Enzyme/Protease

Storage: -20°C, protect from light

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 125 mg/mL (275.60 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2048 mL	11.0239 mL	22.0478 mL
	5 mM	0.4410 mL	2.2048 mL	4.4096 mL
	10 mM	0.2205 mL	1.1024 mL	2.2048 mL

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

BIOLOGICAL ACTIVITY

Description

N-Acetyl lysyltyrosylcysteine amide is a potent, reversible, specific, and non-toxic tripeptide inhibitor of myeloperoxidase (MPO). N-Acetyl lysyltyrosylcysteine amide effectively inhibits MPO generation of toxic oxidants in vivo. N-Acetyl lysyltyrosylcysteine amide reduces neuronal damage and preserves brain tissue and neurological function in the stroked brain. N-Acetyl lysyltyrosylcysteine amide inhibits MPO-dependent hypochlorous acid (HOCl) generation, protein nitration, and LDL oxidation[1][2].

In Vivo

N-Acetyl lysyltyrosylcysteine amide (KYC) significantly decreases infarct size, blood-brain barrier leakage, infiltration of myeloid cells, loss of neurons, and apoptosis in the brains of middle cerebral artery occlusion (MCAO) mice[1].

N-Acetyl lysyltyrosylcysteine amide (10 mg/kg; i.p.; daily for 3-7 days) significantly reduces neurological severity scores and infarct size in MCAO mice[1].

N-Acetyl lysyltyrosylcysteine amide (10 mg/kg; i.p.; daily 7 days) significantly protects BBB function and decreased neutrophil infiltration. N-Acetyl lysyltyrosylcysteine amide (10 mg/kg; i.p.; daily 7 days) significantly reduces microglia/macrophage activation and neuron loss in MCAO mice. N-Acetyl lysyltyrosylcysteine amide (10 mg/kg; i.p.; daily for 3-7 days) decreases apoptosis and cell injury in the brains of MCAO mice. N-Acetyl lysyltyrosylcysteine amide reduced MPO in the brains of MCAO mice. N-Acetyl lysyltyrosylcysteine amide reduces NO2Tyr and 4-HNE in MCAO mice[1].

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

Animal Model:	8-10 weeks old C57BL/6J mice (middle cerebral artery occlusion (MCAO) mode)[1]
Dosage:	10 mg/kg
Administration:	I.p.; daily for 3-7 days
Result:	Significantly reduced neurological deficit and brain infarct size in mice subjected to MCAO.

CUSTOMER VALIDATION

- J Adv Res. 2023 Jun 6;S2090-1232(23)00148-0.

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REFERENCES

[1]. Yu G, et al. Inhibition of myeloperoxidase oxidant production by N-acetyl lysyltyrosylcysteine amide reduces brain damage in a murine model of stroke [published correction appears in J Neuroinflammation. 2016;13(1):166]. J Neuroinflammation. 2016;13(1):11

[2]. Zhang H, et al. N-acetyl lysyltyrosylcysteine amide inhibits myeloperoxidase, a novel tripeptide inhibitor. J Lipid Res. 2013;54(11):3016-3029.

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

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