Uric acid

Cat. No.: HY-B2130

CAS No.: 69-93-2

Molecular Formula: $C_5H_4N_4O_3$

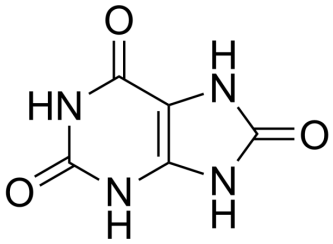
Molecular Weight: 168.11

Target: Endogenous Metabolite; Reactive Oxygen Species

Pathway: Metabolic Enzyme/Protease; Immunology/Inflammation; NF-κB

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

1M NaOH : 8.33 mg/mL (49.55 mM; ultrasonic and warming and adjust pH to 12 with 1M NaOH and heat to 60°C)

H_2O : 6.25 mg/mL (37.18 mM; ultrasonic and adjust pH to 10 with 1M NaOH)

DMSO : < 1 mg/mL (ultrasonic) (insoluble or slightly soluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.9485 mL	29.7424 mL	59.4849 mL
5 mM	1.1897 mL	5.9485 mL	11.8970 mL
10 mM	0.5948 mL	2.9742 mL	5.9485 mL

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

In Vivo

1. Add each solvent one by one: 0.5% CMC-Na/saline water
   Solubility: 10 mg/mL (59.48 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Uric acid, scavenger of oxygen radical, is a very important antioxidant that help maintains the stability of blood pressure and antioxidant stress. Uric acid can remove reactive oxygen species (ROS) such as singlet oxygen and peroxynitrite, inhibiting lipid peroxidation[1][2].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Uric acid (400 μM; 48 hours) protects Caco-2 cells from indomethacin-induced lipid peroxidation[2].

?Co-treatment of cells with Indomethacin and Uric acid (200 μM IND plus 400 μM UA; 24 hours) significantly decreases ROS levels compared to those in cells incubated with indomethacin alone. Cell viability in Caco-2 cells treated with both Indomethacin and Uric acid (200 μM IND plus 400 μM UA; 24 hours) is higher than that in cells treated with indomethacin

	alone. Uric acid has a protective effect on indomethacin-induced intestinal cell changes through its antioxidant activity[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Uric acid (250 mg/kg; p.o.) ameliorates indomethacin-induced enteropathy[2]. ?Oral administration of uric acid decreased ROS accumulation in the ileum in a mouse model of indomethacin-induced enteropathy[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Eight-week-old male C57BL/6J mice[2]
Dosage:	250 mg/kg body weight
Administration:	P.o.
Result:	When mice treated with indomethacin were concurrently administered uric acid orally, ulcer areas were significantly reduced, in a uric acid dose-dependent manner.

CUSTOMER VALIDATION

- Int J Mol Sci. 2022 Jun 20;23(12):6860.
- Drug Dev Res. 2020 Nov;81(7):859-866.
- Exp Biol Med. 2021 Oct 4;15353702211047183.
- BMC Neurol. 2023 Dec 16;23(1):444.
- Research Square Preprint. 2023 Jul 28.

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REFERENCES

[1]. Yasutake Y, et al. Uric acid ameliorates indomethacin-induced enteropathy in mice through its antioxidant activity. J Gastroenterol Hepatol. 2017 Nov;32(11):1839-1845.

[2]. Wang Q, et al. Recent Progress on Uric Acid Detection: A Review. Crit Rev Anal Chem. 2020;50(4):359-375.

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