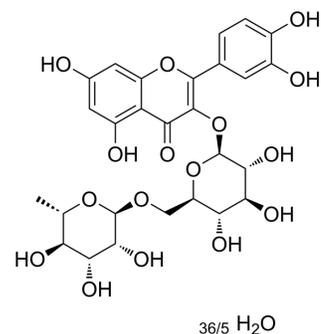


Rutin hydrate

Cat. No.:	HY-N0148A
CAS No.:	207671-50-9
Molecular Formula:	C ₂₇ H ₃₀ O ₁₆ ·36/5 H ₂ O
Molecular Weight:	740.26
Target:	Amyloid-β; Autophagy; Endogenous Metabolite; Apoptosis
Pathway:	Neuronal Signaling; Autophagy; Metabolic Enzyme/Protease; Apoptosis
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 50 mg/mL (67.54 mM; Need ultrasonic)					
	Preparing Stock Solutions	Concentration	Mass	1 mg	5 mg	10 mg
		1 mM		1.3509 mL	6.7544 mL	13.5088 mL
		5 mM		0.2702 mL	1.3509 mL	2.7018 mL
		10 mM		0.1351 mL	0.6754 mL	1.3509 mL
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 1% CMC-Na/saline water Solubility: 3.33 mg/mL (4.50 mM); Suspended solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (3.38 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (3.38 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (3.38 mM); Clear solution 					

BIOLOGICAL ACTIVITY

Description	Rutin (Rutoside) hydrate is a flavonoid found in many plants and shows a wide range of biological activities including anti-inflammatory, antidiabetic, antioxidant, neuroprotective, nephroprotective, hepatoprotective and reducing Aβ oligomer activities. Rutin hydrate can cross the blood brain barrier. Rutin hydrate attenuates vancomycin-induced renal tubular cell apoptosis via suppression of apoptosis, mitochondrial dysfunction, and oxidative stress ^{[1][2][3]} .
In Vivo	Rutin hydrate ameliorates cadmium chloride-induced spatial memory loss and neural apoptosis in rats by enhancing levels of acetylcholine, inhibiting JNK and ERK1/2 activation and activating mTOR signaling ^[4] .

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

PROTOCOL

Animal Administration ^[1]

Rats^[1]

(1) A control group receives of 0.01 g/mL carboxymethylcellulose (CMC) dissolved in distilled water; (2) α -tocopherol acetate treated group: control rats receive α -tocopherol (120 IU/rat) diluted in 0.1 mL of coconut oil; (3) Rutin hydrate treated control group (control + Rutin hydrate): control rats receive Rutin hydrate (100 mg/kg); (4) CdCl₂ intoxicated group receives CdCl₂ at a final dose of 5 mg/kg to induce neurotoxicity; (5) CdCl₂ + Rutin hydrate treated group (CdCl₂ + Rutin hydrate) receives CdCl₂ (5 mg/kg) and receives a coincided dose of Rutin hydrate (100 mg/kg body weight); (6) CdCl₂ + Rutin hydrate + α -tocopherol acetate-treated group receives CdCl₂ (5 mg/kg) and receives concomitant dose of Rutin hydrate (100 mg/kg) in conjugation with α -tocopherol acetate (120 IU/rat) that is diluted in 0.1 mL of coconut oil. All treatments are given by orogastric gavage with a polyethylene catheter PE 190 daily for 30 days^[1].

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

CUSTOMER VALIDATION

- Adv Sci (Weinh). 2022 Oct 18;e2203088.
- Food Chem. 2022: 134807.
- Food Chem. 16 December 2021, 131872.
- Phytomedicine. 2023 Feb 4;112:154700.
- Antioxidants (Basel). 2023 Nov 7, 12(11), 1974.

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REFERENCES

- [1]. Ghorbani A. Mechanisms of antidiabetic effects of flavonoid rutin. Biomed Pharmacother. 2017;96:305-312.
- [2]. Habtemariam S. Rutin as a Natural Therapy for Alzheimer's Disease: Insights into its Mechanisms of Action. Curr Med Chem. 2016;23(9):860-873.
- [3]. Xu PX, et al. Rutin improves spatial memory in Alzheimer's disease transgenic mice by reducing A β oligomer level and attenuating oxidative stress and neuroinflammation. Behav Brain Res. 2014;264:173-180.
- [4]. Abdel-Aleem GA, et al. Rutin hydrate ameliorates cadmium chloride-induced spatial memory loss and neural apoptosis in rats by enhancing levels of acetylcholine, inhibiting JNK and ERK1/2 activation and activating mTOR signalling. Arch Physiol Biochem. 2018;124(4):367-377.

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

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