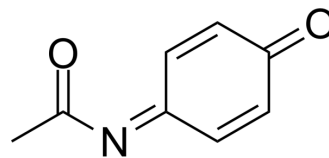


NAPQI

Cat. No.:	HY-W017464
CAS No.:	50700-49-7
Molecular Formula:	C ₈ H ₇ NO ₂
Molecular Weight:	149
Target:	Endogenous Metabolite; Drug Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	-80°C, protect from light, stored under nitrogen



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (671.14 mM; Need ultrasonic)

Concentration	Solvent	Mass	1 mg	5 mg	10 mg
			1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		6.7114 mL	33.5570 mL	67.1141 mL
	5 mM		1.3423 mL	6.7114 mL	13.4228 mL
	10 mM		0.6711 mL	3.3557 mL	6.7114 mL

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

BIOLOGICAL ACTIVITY

Description

NAPQI is the toxic metabolite of [Acetaminophen](#) (HY-66005). NAPQI is also an inhibitor of enzymes in the vitamin K cycle. NAPQI is rapidly detoxified by glutathione (GSH), but in situations of GSH deficiency, excess NAPQI reacts with cysteine residues in proteins, causing cell death and toxicity in the liver^{[1][2]}.

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro

NAPQI (25-400 μM, 30 min) inhibits the synthesis of glutathione synthase (GS)^[3].
 NAPQI (0.15 mg/mL, 24-48 h) is toxic to auditory cell HEI-OC1 through oxidation and endoplasmic reticulum stress-dependent pathways^[4].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.
 Cell Viability Assay^[4]

Cell Line:	HEI-OC1
Concentration:	0.15 mg/mL
Incubation Time:	24, 48 h

Result:	Decreased viability of HEI-OC1 cells at 24 and 48 h.
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REFERENCES

- [1]. Jiang D, et al. Organ-Specific Screening for Protein Damage Using Magnetic Bead Bioreactors and LC-MS/MS. *Anal Chem.* 2020 Apr 7;92(7):5337-5345.
- [2]. Thijssen HH, et al. Paracetamol (acetaminophen) warfarin interaction: NAPQI, the toxic metabolite of paracetamol, is an inhibitor of enzymes in the vitamin K cycle. *Thromb Haemost.* 2004 Oct;92(4):797-802.
- [3]. Walker V, et al. The acetaminophen metabolite N-acetyl-p-benzoquinone imine (NAPQI) inhibits glutathione synthetase in vitro; a clue to the mechanism of 5-oxoprolinuric acidosis? *Xenobiotica.* 2017 Feb;47(2):164-175.
- [4]. Kalinec GM, et al. Acetaminophen and NAPQI are toxic to auditory cells via oxidative and endoplasmic reticulum stress-dependent pathways. *Hear Res.* 2014 Jul;313:26-37.
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Caution: Product has not been fully validated for medical applications. For research use only.

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