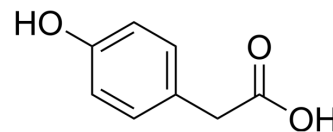


4-Hydroxyphenylacetic acid

Cat. No.:	HY-N1902
CAS No.:	156-38-7
Molecular Formula:	C ₈ H ₈ O ₃
Molecular Weight:	152.15
Target:	Keap1-Nrf2; Endogenous Metabolite
Pathway:	NF-κB; Metabolic Enzyme/Protease
Storage:	4°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	DMSO : ≥ 100 mg/mL (657.25 mM) * "≥" means soluble, but saturation unknown.					
		Solvent Concentration	Mass			
	Preparing Stock Solutions			1 mg	5 mg	10 mg
		1 mM		6.5725 mL	32.8623 mL	65.7246 mL
		5 mM		1.3145 mL	6.5725 mL	13.1449 mL
	10 mM		0.6572 mL	3.2862 mL	6.5725 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (16.43 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (16.43 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (16.43 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	4-hydroxyphenylacetic acid, a major microbiota-derived metabolite of polyphenols, is involved in the antioxidative action. 4-hydroxyphenylacetic acid induces expression of Nrf2 ^[1] .	
IC ₅₀ & Target	Human Endogenous Metabolite	Microbial Metabolite
In Vivo	4-Hydroxyphenylacetic acid (6, 12, or 25 mg/kg) increases Nrf2 translocation to the nucleus and enhances the activity of phase II and antioxidant enzymes. The protein levels of nuclear Nrf2 are increased by 170% and 230% in pre-treated 12 and	

25 mg/kg 4-Hydroxyphenylacetic acid groups, respectively, compared with the control group. The 4-Hydroxyphenylacetic acid pretreatment at a final dose of 25 mg/kg markedly and selectively up-regulated the target genes of phase II enzymes and resulted in higher up-regulation than that of the control group by 270%, 400%, and 500% for UGT1A1, UGT1A9, and SULT2A1, respectively. 4-Hydroxyphenylacetic acid also suppresses the expression of CYP2E1^[1].

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

REFERENCES

[1]. Zhao H, et al. 4-Hydroxyphenylacetic Acid Prevents Acute APAP-Induced Liver Injury by Increasing Phase II and Antioxidant Enzymes in Mice. *Front Pharmacol.* 2018 Jun 19;9:653.

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

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