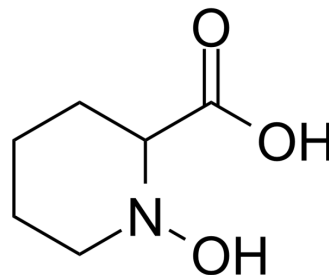


N-Hydroxypipelicolic acid

Cat. No.:	HY-N7378		
CAS No.:	115819-92-6		
Molecular Formula:	C ₆ H ₁₁ NO ₃		
Molecular Weight:	145.16		
Target:	Others		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 83.33 mg/mL (574.06 mM; Need ultrasonic)
 H₂O : 50 mg/mL (344.45 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		6.8889 mL	34.4447 mL	68.8895 mL
	5 mM		1.3778 mL	6.8889 mL	13.7779 mL
	10 mM		0.6889 mL	3.4445 mL	6.8889 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.08 mg/mL (14.33 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.08 mg/mL (14.33 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.08 mg/mL (14.33 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

N-Hydroxypipelicolic acid (1-Hydroxy-2-piperidinecarboxylic acid), a plant metabolite and a systemic acquired resistance (SAR) regulator, orchestrates SAR establishment in concert with the immune signal salicylic acid. N-Hydroxypipelicolic acid accumulates systemically in the plant foliage in response to pathogen attack. N-Hydroxypipelicolic acid induces SAR to bacterial and oomycete infection^{[1][2][3]}.

In Vitro

The mode of action of N-Hydroxypipelicolic acid (NHP) in SAR involves direct induction of SAR gene expression, signal

amplification, priming for enhanced defense activation and positive interplay with salicylic acid signaling to ensure elevated plant immunity. Flavin-dependent-monooxygenase1 (FMO1) functions downstream of Pip by hydroxylating Pip to generate NHP^{[1][3]}.

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

REFERENCES

- [1]. Shan L, et al. Pipped at the Post: Pipecolic Acid Derivative Identified as SAR Regulator. *Cell*. 2018 Apr 5;173(2):286-287.
- [2]. Ádám AL, et al. Signals of Systemic Immunity in Plants: Progress and Open Questions. *Int J Mol Sci*. 2018 Apr 10;19(4). pii: E1146.
- [3]. Hartmann M, et al. N-hydroxypipicolinic acid and salicylic acid: a metabolic duo for systemic acquired resistance. *Curr Opin Plant Biol*. 2019 Aug;50:44-57.

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

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