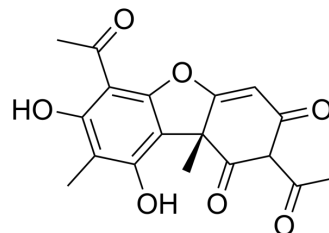


(+)-Usnic acid

Cat. No.:	HY-N0656A
CAS No.:	7562-61-0
Molecular Formula:	C ₁₈ H ₁₆ O ₇
Molecular Weight:	344.32
Target:	mTOR; Bacterial; Autophagy
Pathway:	PI3K/Akt/mTOR; Anti-infection; Autophagy
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : ≥ 1.92 mg/mL (5.58 mM) H ₂ O : < 0.1 mg/mL (insoluble) * "≥" means soluble, but saturation unknown.				
	Please refer to the solubility information to select the appropriate solvent.				
Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
		1 mM	2.9043 mL	14.5214 mL	29.0428 mL
		5 mM	0.5809 mL	2.9043 mL	5.8085 mL
		10 mM	---	---	---
In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 0.63 mg/mL (1.83 mM); Clear solution				

BIOLOGICAL ACTIVITY

Description	(+)-Usnic acid is isolated from lichens, binds at the ATP-binding pocket of mTOR, and inhibits mTORC1/2 activity. (+)-Usnic acid inhibits the phosphorylation of mTOR downstream effectors: Akt (Ser473), 4EBP1, S6K, induces autophagy, with anti-cancer activity ^[1] . (+)-Usnic acid possesses antimicrobial activity against a number of planktonic gram-positive bacteria, including Staphylococcus aureus, Enterococcus faecalis, and Enterococcus faecium ^[2] .	
IC ₅₀ & Target	mTORC1	mTORC2

CUSTOMER VALIDATION

-
- ACS Infect Dis. 2023 Nov 9.
 - Allergy Asthma Clin Immunol. 2022 Jun 19;18(1):55.

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REFERENCES

- [1]. Ebrahim HY, et al. Usnic Acid Benzylidene Analogues as Potent Mechanistic Target of Rapamycin Inhibitors for the Control of Breast Malignancies. J Nat Prod. 2017 Apr 28;80(4):932-952.
- [2]. Francolini I, et al. Usnic acid, a natural antimicrobial agent able to inhibit bacterial biofilm formation on polymer surfaces. Antimicrob Agents Chemother. 2004;48(11):4360-4365.
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Caution: Product has not been fully validated for medical applications. For research use only.

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