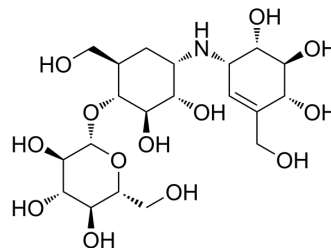


## Validamycin A

<b>Cat. No.:</b>	HY-B0856
<b>CAS No.:</b>	37248-47-8
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>35</sub> NO <sub>13</sub>
<b>Molecular Weight:</b>	497.49
<b>Target:</b>	Fungal; Tyrosinase; Antibiotic
<b>Pathway:</b>	Anti-infection; Metabolic Enzyme/Protease
<b>Storage:</b>	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	H <sub>2</sub> O : 125 mg/mL (251.26 mM; Need ultrasonic)				
		<b>Solvent</b>	<b>Mass</b>		
	<b>Preparing Stock Solutions</b>	<b>Concentration</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>1 mM</b>	2.0101 mL	10.0505 mL	20.1009 mL
<b>5 mM</b>		0.4020 mL	2.0101 mL	4.0202 mL	
	<b>10 mM</b>	0.2010 mL	1.0050 mL	2.0101 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (201.01 mM); Clear solution; Need ultrasonic				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Validamycin A, a fungicidal, is an agricultural antibiotic. Validamycin A is originally isolated from <i>Streptomyces hygroscopicus</i> var. <i>limoneus</i> . Validamycin A inhibits the growth of <i>A. flavus</i> , with a MIC of 1 µg/mL <sup>[1]</sup> . Validamycin A shows potent inhibitory activity against trehalase of <i>Rhizoctonia solani</i> , with an IC <sub>50</sub> of 72 µM <sup>[2]</sup> . Validamycin A is a reversible tyrosinase inhibitor, with a K <sub>i</sub> of 5.893 mM <sup>[3]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Antibiotic <sup>[1]</sup> , IC <sub>50</sub> : 72 µM (trehalase) <sup>[2]</sup> , Ki: 5.893 mM (tyrosinase) <sup>[3]</sup>
<b>In Vitro</b>	Validamycin A (0.5-1 µg/mL; 18 hours) inhibits the growth of <i>A. flavus</i> and delayed conidial germination <sup>[1]</sup> . ?Validamycin A shows no cytotoxicity to human bronchial epithelial cells <sup>[1]</sup> . ?Validamycin A directly binds to several residues in the active site of tyrosinase, including HIS85, HIS244, GLU256, HIS259 and ASN260 <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Proliferation Assay <sup>[1]</sup>

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Cell Line:	Aspergillus flavus ATCC204304
Concentration:	0.5 µg/mL, 1 µg/mL
Incubation Time:	18 hours
Result:	Inhibited the growth of Aspergillus flavus.

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## REFERENCES

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- [1]. Napasawan Plabutong, et al. The Inhibitory Effect of Validamycin A on Aspergillus flavus. *Int J Microbiol.* 2020; 2020: 3972415.
- [2]. Zhi-Jiang Wang, et al. The effect of validamycin A on tyrosinase: inhibition kinetics and computational simulation. *Int J Biol Macromol.* 2013 Apr;55:15-23.
- [3]. N Asano, et al. Effect of validamycins on glycohydrolases of Rhizoctonia solani. *J Antibiot (Tokyo).* 1987 Apr;40(4):526-32.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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