

# PRODUCT INFORMATION



## Ambuic Acid

Item No. 27483

**CAS Registry No.:** 340774-69-8  
**Formal Name:** (2E)-4-[(1R,5R,6R)-3-(1E)-1-hepten-1-yl-5-hydroxy-4-(hydroxymethyl)-2-oxo-7-oxabicyclo[4.1.0]hept-3-en-1-yl]-2-methyl-2-butenoic acid

**Synonym:** (+)-Ambuic Acid

**MF:** C<sub>19</sub>H<sub>26</sub>O<sub>6</sub>

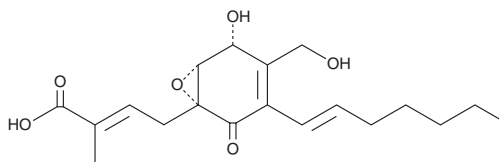
**FW:** 350.4

**Purity:** ≥95%

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Ambuic acid is supplied as a solid. A stock solution may be made by dissolving the ambuic acid in the solvent of choice, which should be purged with an inert gas. Ambuic acid is soluble in ethanol, methanol, and DMSO.

### Description

Ambuic acid is a cyclohexanone originally isolated from *Pestalotiopsis* and *Monochaetia* species that has phytopathogenic antifungal, quorum sensing inhibitory, and antibacterial activities.<sup>1-3</sup> It is active against *P. ultimum* (MIC = 7.5 µg/ml) and inhibits the growth of a variety of other phytopathogenic fungi, including *F. solani*, *H. sativum*, and *C. gramineum*, but not *P. oryzae*, *R. solani*, or *B. cinerea*. Ambuic acid inhibits the biosynthesis of cyclic peptides involved in quorum sensing, including gelatinase biosynthesis-activating pheromone (GBAP) in *E. faecalis*, autoinducing peptide I (AIP-I) in *S. aureus*, and LsrD698 and LsrD826 in *L. innocua*.<sup>2</sup> It suppresses abscess formation in a mouse model of skin infection induced by methicillin-resistant *S. aureus* (MRSA) when administered at a dose of 5 µg and decreases the activity of the *agr* quorum sensing system in an *in vivo* reporter assay.<sup>3</sup>

### References

1. Li, J.Y., Harper, J.K., Grant, D.M., *et al.* Ambuic acid, a highly functionalized cyclohexenone with antifungal activity from *Pestalotiopsis* spp. and *Monochaetia* sp. *Phytochemistry* **56(5)**, 463-468 (2001).
2. Nakayama, J., Uemura, Y., Nishiguchi, K., *et al.* Ambuic acid inhibits the biosynthesis of cyclic peptide quorumones in gram-positive bacteria. *Antimicrob. Agents Chemother.* **53(2)**, 580-586 (2009).
3. Todd, D.A., Parlet, C.P., Crosby, H.A., *et al.* Signal biosynthesis inhibition with ambuic acid as a strategy to target antibiotic-resistant infections. *Antimicrob. Agents Chemother.* **61(8)**, 1-11 (2017).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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