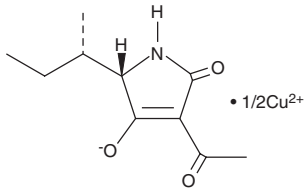
PRODUCT INFORMATION

Tenuazonic Acid (copper salt)

Item No. 11443

Formal Name:	3-acetyl-1,5-dihydro-4-hydroxy-5S-[(1S)-1-methylpropyl]-2H-pyrrol-2-one, copper salt (2:1)
Synonym:	AAC-toxin
MF:	$C_{10}H_{14}NO_3 \bullet 1/2Cu$
FW:	228.0
Purity:	≥98%
UV/Vis.:	λ_{max}: 225, 291 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

Tenuazonic acid (copper salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the tenuazonic acid (copper salt) in the solvent of choice. Tenuazonic acid (copper salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of tenuazonic acid (copper salt) in ethanol and DMSO is approximately 20 mg/ml and approximately 30 mg/ml in DMF.

Tenuazonic acid (copper salt) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tenuazonic acid (copper salt) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Tenuazonic acid (copper salt) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Tenuazonic acid is one of the major *Alternaria* mycotoxins commonly found as a natural contaminant in food (LD_{50} = 548 µg/egg in the chicken embryo toxicity assay).[1] Tenuazonic acid contamination has been linked to esophageal cancer in human populations at risk of high exposure. Mice fed 100 mg/kg/day tenuazonic acid orally for 10 months developed precancerous lesions on the esophageal mucosa.[2] Microscopic analysis of mucosal epithelial cells from these tenuazonic acid-treated animals reveal pyknosis and marked pleomorphisms in the nuclei, chromatin granulation and increased chromatin mass, irregularities in nuclear contours, and vacuolization in nucleoplasms.[2]

References

1. Griffin, G.F. and Chu, F.S. Toxicity of the *Alternaria* metabolites alternariol, alternariol methyl ether, altenuene, and tenuazonic acid in the chicken embryo assay. *Appl. Environ. Microbiol.* **46(6)**, 1420-1422 (1983).
2. Yekeler, H., Bitmis, K., Ozçelik, N., *et al.* Analysis of toxic effects of *Alternaria* toxins on esophagus of mice by light and electron microscopy. *Toxicol. Pathol.* **29**, 492-497 (2001)

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