Product Information

α-Amanitin

From *Amanita phalloides*

A2263

Synonym: α-Amatoxin

CAS Number: 23109-05-9

Physical Description

Appearance

White to light yellow powder

Molecular formula

$C_{39}H_{54}N_{10}O_{14}S$

Molecular weight

919.0

Melting point

254-255 °C

ε^M (310 nm) = 13,500 (water)[1]

Structure

α-amanitin differs structurally from β-amanitin in that it has an amide rather than a carboxyl group.

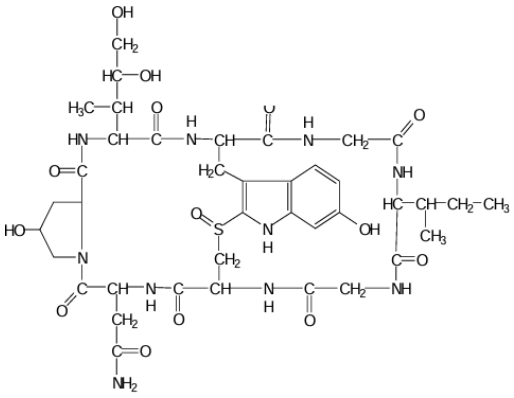

Figure 1: α-Amanitin.

Storage/Stability as Supplied

When stored frozen in the dark, retained samples were found to be greater than 99% by HPLC after two years.

Solubility/Stability of Solutions

We do not routinely test α-amanitin for solubility due to the hazardous nature of the material. It does dissolve at 1 mg/mL in water when tested by HPLC. It is reportedly soluble in water, methanol and ethanol.[2]

It is suggested to prepare a stock solution at 1 mg of α-amanitin per mL of water; this stock solution should be kept frozen in aliquots (−20 °C or below). Dilution with the appropriate buffer should be done immediately before use. The solution can be checked for intactness of α-amanitin by UV spectrometry, where it should show the typical absorption spectrum[3] (ε^M = 13,500 at 310 nm in water).[1]

α-Amanitin is destroyed by concentrated acids (sulfuric acid or hydrochloric acid) and by concentrated sodium hydroxide. Glassware may be quickly decontaminated by washing in sulfuric acid/chromic oxide cleaning solution.[3]

This product is extremely toxic. Be aware of the risks and be familiar with safety procedures before you use this product.

General Remarks

Among the various families of mushroom, the "true poisonous mushrooms" are of the genus *Amanita*. Not all the members of this genus are highly poisonous, but *Amanita phalloides*, the "green death cap" mushroom, contains a variety of compounds that are toxic for mammalian organisms. In this group, amatoxins and phallotoxins are two families of cyclic peptides that act on cytoplasmic or nuclear cell components. The amatoxins, one of which is α-amanitin, inhibit transcription of eukaryotic cells when present in nanomolar concentrations.[4]

In molecular biology applications, α-amanitin has become a tool in probing RNA-synthesis, since it has been shown to be a specific inhibitor of RNA Polymerase II.[5-9]

References

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3. Wieland, T., Int. J. Peptide Protein Res., 22,257-276 (1983). "The toxic peptides from Amanita mushrooms."
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23263892 Rev 09/25