Phomopsin A
Item No. 19448

CAS Registry No.: 64925-80-0
Formal Name: \((2E)-(\beta S)-3\text{-chloro-}\beta,5\text{-dihydroxy-N-methyl-}
\text{-L-tyrosyl-3,4-didehydro-L-valyl-3-hydroxy-}
\text{-L-isoleucyl-3,4-didehydro-L-proyl-(2E)-2,3-}
didehydroisoleucyl-2,3-didehydro-aspartic}
\text{acid, cyclic (1\text{-5}\rightarrow3)-ether}

Synonym: NSC 381839
MF: C_{36}H_{45}ClN_{6}O_{12}
FW: 789.2
Purity: \(\geq 98\%\)
Supplied as: A solid
Storage: -20°C
Stability: \(\geq 2\) years

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

Laboratory Procedures

Phomopsin A is supplied as a solid. A stock solution may be made by dissolving the phomopsin A in the solvent of choice. Phomopsin A is soluble in organic solvents such as ethanol, methanol, DMSO and dimethyl formamide, which should be purged with an inert gas.

Phomopsin A is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Phomopsins are a family of mycotoxins produced by the fungus \textit{D. toxica}, which predominantly infects lupines. Ingestion of lupines infected with \textit{D. toxica} causes lupinosis, a degenerative disorder that can result in acute liver damage, brain damage, and death. Phomopsin A is a cyclic hexapeptide mycotoxin that binds \(\beta\)-tubulin in a vinca domain, overlapping with the site targeted by vinblastine (Item No. 11762) and other tubulin inhibitors. It binds \(\beta\)-tubulin from higher organisms but not \(\alpha\)-tubulin or fungal mycelial tubulin. Phomopsin A blocks microtubule growth, modulates the dynamics of microtubules, and interferes with mitosis.

References