

Product Name:	Venturicidin B
Product Number:	V018
CAS Number:	33538-72-6
Molecular Formula:	C ₄₀ H ₆₆ O ₁₀
Molecular Weight:	707.0
Appearance:	White Lyophilisate
Source:	Streptomyces sp.
Storage Conditions:	-20°C
Description:	<p>Venturicidin B (Aabomycin A2) is a 20-member macrolide glycoside compound that was originally isolated from a <i>Streptomyces sp.</i> by Glaxo Labs in 1961. Venturicidin B is a potent antifungal and toxic antibiotic compound, that has also shown cytotoxicity to trypanosomes.</p> <p>Venturicidin B is a potent inhibitor of bacterial and mitochondrial ATP-synthase complexes acting on the F₀ membrane sector, with experiments suggesting that the compound strongly inhibits ATP-driven proton transport and ATP hydrolysis. Venturicidin B demonstrates the ability to drastically decrease the open probability of voltage sensitive K⁺ channels. Venturicidin B is an inhibitor of ATP5 as well as a potential inhibitor of <i>E. coli</i> H⁺-ATPase.</p> <p>Venturicidin B is soluble in ethanol, methanol, DMF and DMSO.</p>
Mechanism of Action:	<p>Venturicidin B binds to the subunit-c of the coupling factor o, or F₀ of mitochondrial and bacterial ATP synthase complex. Once bound to the ATP synthase, Venturicidin B blocks proton translocation and inhibits ATP synthesis in both fungi and bacteria.</p>
Spectrum:	<p>Venturicidin B is potent inhibitor of fungal and bacterial strains and has low toxicity for higher plants and animals.</p>
Plant Biology Applications	<p>Venturicidin protects plants from infection with pathogenic fungi such as <i>Erysiphe graminis</i>, <i>Erysiphe cichoracearum</i>, <i>Podoshpaera leucotricha</i> and <i>Botrytis cinerea</i>. It is also effective against fungi in the genus <i>Venturia</i> which can cause apple scab.</p>

References:

Studies on the mechanism of oxidative phosphorylation. ATP synthesis by submitochondrial particles inhibited at F₀ by venturicidin and organotin compounds. Matsuno-Yagi A. & Hatefi Y. J. Biol. Chem. 1993, 268, 6168.

Potassium selective and venturicidin sensitive conductances of F_o purified from bovine heart mitochondria, reconstituted in planar lipid bilayers. Miedema H. et al. Biochem. Biophys. Res. Commun. 1994, 203, 1005.

Amino acid substitutions in mitochondrial ATP synthase subunit 9 of *Saccharomyces cerevisiae* leading to venturicidin or ossamycin resistance. Galanis M. et al. FEBS Lett. 1989, 249, 333.

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