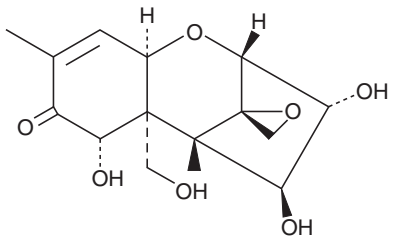
PRODUCT INFORMATION

Nivalenol

Item No. 11438

CAS Registry No.:	23282-20-4
Formal Name:	(3α,4β,7α)-12,13-epoxy-3,4,7,15-tetrahydroxy-trichothec-9-en-8-one
Synonym:	NSC 269143
MF:	$C_{15}H_{20}O_7$
FW:	312.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 220 nm
Supplied as:	A crystalline powder
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Nivalenol is supplied as a crystalline powder. A stock solution may be made by dissolving the nivalenol in the solvent of choice, which should be purged with an inert gas. Nivalenol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of nivalenol in ethanol and DMF is approximately 30 mg/ml and approximately 25 mg/ml in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of nivalenol can be prepared by directly dissolving the crystalline powder in aqueous buffers. The solubility of nivalenol in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Nivalenol is a trichothecene mycotoxin that has been found in *Fusarium*.[1] It is lethal to mice (LD_{50} = 6.9 mg/kg).[2] Nivalenol (5, 10, and 15 mg/kg) also induces thymic, splenic, and Peyer's patch cell apoptosis in mice.[3]

References

1. Yang, Z., Concannon, J., Ng, K.S., *et al.* Tetrandrine identified in a small molecule screen to activate mesenchymal stem cells for enhanced immunomodulation. *Sci. Rep.* **6**, 30263 (2016).
2. Yoshizawa, T. and Morooka, N. Studies on the toxic substances in the infected cereals (part 3): Acute toxicities of new trichothecene mycotoxins: Deoxynivalenol and its monoacetate. *J. Food Hyg.* **15(4)**, 261-269 (1974).
3. Poapolathep, A., Ohtsuka, R., Kiatipattanasakul, W., *et al.* Nivalenol-induced apoptosis in thymus, spleen and Peyer's patches of mice. *Exp. Toxicol. Pathol.* **53(6)**, 441-446 (2002).

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