

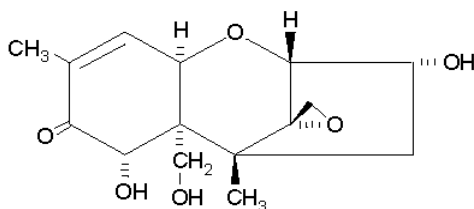
Product Information

Deoxynivalenol

Product Number **D 0156**
Storage Temperature 2-8 °C

CAS RN: 51481-10-8

Synonyms: DON; Vomitoxin, Dehydronivalenol,
4-Deoxynivalenol, RD-toxin



Molecular Formula: C₁₅H₂₀O₆
Molecular Weight: 296.32

Melting Point: 151-153 °C¹
 λ_{\max} : 218 nm (ethanol)¹
 E_{mM} : 4.50 (218 nm) in ethanol¹
 $[\alpha]_D^{25}$: +6.35° (c = 0.07 in ethanol)¹

Product Description

Deoxynivalenol (DON) is a trichothecene mycotoxin produced from *Fusarium* cultures. It inhibits the synthesis of DNA and RNA and protein synthesis at the ribosomal level. The toxin has a hemolytic effect on erythrocytes. An acute dose can induce vomiting (emesis) in pigs, whereas at lower concentrations in the diet it reduces growth and feed consumption (anorexia).²

DON induces IL-6 mediated serum hyper-elevation of IgA^{3,4} as well as phosphorylation of extracellular signal regulated protein kinases 1 and 2 (ERK 1,2) and c-Jun N-terminal kinases 1 and 2 (JNK 1,2) in mice.⁵ LPS and its downstream mediators can interact with deoxynivalenol to modulate proliferative, cytotoxic and apoptotic outcomes in leukocytes in a tissue specific manner.⁶

Deoxynivalenol is difficult to derivatize. Therefore, gas chromatography analysis is difficult to perform. Most researchers use thin-layer chromatography or HPLC for analysis of this product and its metabolites.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Soluble in common polar organic solvents such as acetonitrile, methanol and ethyl acetate, slightly soluble in water. Sigma tests the solubility at 10 mg/ml in 100% ethanol, yielding a clear solution.

Storage/Stability

Store desiccated and protected from light at 2-8 °C. Under these conditions the product is stable for 4 years. Acetonitrile is a suitable solvent for DON due to its water miscibility. Solutions of DON in acetonitrile are stable at temperatures up to 25 °C for at least 24 months. Long-term storage in ethyl acetate or as a thin film at temperatures above freezing should be avoided.⁷

References

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4. Moon, Y. and Pestka, J.J., Toxicol. Appl. Pharmacol., **187**, 80-88 (2003).
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7. Widstrand, J., and Pettersson, H., Food Addit. Contam., **18**, 987-92 (2001).

NDH/PHC 12/04

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