

# PRODUCT INFORMATION

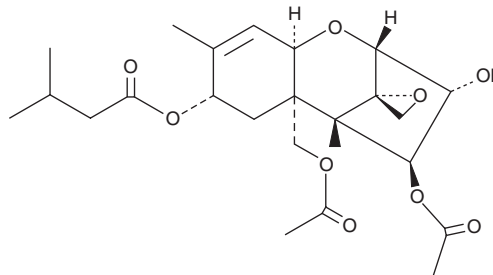


## T-2 Toxin

Item No. 11444

**CAS Registry No.:** 21259-20-1  
**Formal Name:** (3 $\alpha$ ,4 $\beta$ ,8 $\alpha$ )-12,13-epoxy-4,15-diacetate 8-(3-methylbutanoate) trichothec-9-ene-3,4,8,15-tetrol  
**Synonyms:** Fusariotoxin T-2, Insariotoxin, Mycotoxin T-2, NSC 138780

**MF:** C<sub>24</sub>H<sub>34</sub>O<sub>9</sub>  
**FW:** 466.6  
**Purity:**  $\geq$ 98%  
**Supplied as:** A crystalline 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

T-2 toxin is supplied as a crystalline solid. A stock solution may be made by dissolving the T-2 toxin in the solvent of choice. T-2 toxin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of T-2 toxin in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

T-2 toxin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, T-2 toxin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. T-2 toxin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

T-2 toxin is a trichothecene mycotoxin that has been found in *Fusarium*.<sup>1</sup> It binds to and inhibits peptidyltransferase in the 60S ribosomal subunit, inducing a ribotoxic stress response that triggers JNK and p38 MAPK signaling. T-2 toxin (3 nM) decreases toll-like receptor expression and LPS-induced production of IL-1 $\beta$ , TNF- $\alpha$ , and nitric oxide (NO) in, and is cytotoxic to (IC<sub>50</sub> = 19.47), primary pig alveolar macrophages (PAMs).<sup>2</sup> *In vivo*, T-2 toxin induces production of reactive oxygen species (ROS), lipid peroxidation, and glutathione (GSH) depletion in mouse brain and is lethal to mice (LD<sub>50</sub>s = 1.54-5.94 mg/kg).<sup>1</sup> It also induces hepatocyte apoptosis and dyslipidemias in mice. T-2 toxin has been found in *Fusarium*-infected wheat, barley, and rice crops both in fields and in storage.

### References

1. Doi, K. and Uetsuka, K. Mechanisms of mycotoxin-induced neurotoxicity through oxidative stress-associated pathways. *Int. J. Mol. Sci.* **12(8)**, 5213-5237 (2011).
2. Seeboth, J., Solinhac, R., Oswald, I.P., *et al.* The fungal T-2 toxin alters the activation of primary macrophages induced by TLR-agonists resulting in a decrease of the inflammatory response in the pig. *Vet. Res.* **43:35**, (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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