

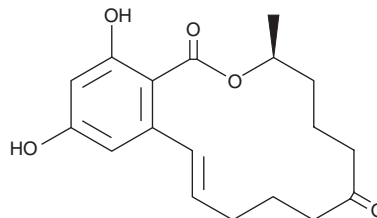
# PRODUCT INFORMATION



## Zearalenone

Item No. 11353

**CAS Registry No.:** 17924-92-4  
**Formal Name:** (3S,11E)-3,4,5,6,9,10-hexahydro-14,16-dihydroxy-3-methyl-1H-2-benzoxacyclotetradecin-1,7(8H)-dione  
**Synonyms:** FES, Mycotoxin F<sub>2</sub>, Toxin F<sub>2</sub>, Zenone  
**MF:** C<sub>18</sub>H<sub>22</sub>O<sub>5</sub>  
**FW:** 318.4  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 236, 274, 316 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

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

Zearalenone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, zearalenone should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Zearalenone has a solubility of approximately 0.12 mg/ml in a 1:7 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Zearalenone is a mycotoxin that has been found in *Fusarium* and has estrogenic activities.<sup>1</sup> It binds to human estrogen receptor  $\alpha$  (ER $\alpha$ ) and ER $\beta$  (IC<sub>50</sub>s = 9 and 5.8 nM, respectively).<sup>2</sup> Zearalenone induces precocious development of mammary tissues in young female pigs and prepuccial enlargement in young male pigs.<sup>3</sup> Zearalenone (1.5-5 mg/kg of diet) induces hyperestrogenism in pigs. It also induces degeneration of meiotic chromatin in oocytes and reduces fertility in pigs when administered at a dose of 200  $\mu$ g/kg.<sup>4</sup> Zearalenone has been found as a contaminant in wheat, maize, and barley and livestock feeds.<sup>3,4</sup>

### References

1. Zinedine, A., Soriano, J.M., Moltó, J.C., *et al.* Review on the toxicity, occurrence, metabolism, detoxification, regulations and intake of zearalenone: An oestrogenic mycotoxin. *Food Chem. Toxicol.* **45(1)**, 1-18 (2007).
2. Kuiper, G.G.J.M., Lemmen, J.G., Carlsson, B., *et al.* Interaction of estrogenic chemicals and phytoestrogens with estrogen receptor  $\beta$ . *Endocrinology* **139(10)**, 4252-4263 (1998).
3. Richard, J.L. Some major mycotoxins and their mycotoxicoses—an overview. *Int. J. Food Microbiol.* **119(1-2)**, 3-10 (2007).
4. Tiemann, U. and Dänicke, S. *In vivo* and *in vitro* effects of the mycotoxins zearalenone and deoxynivalenol on different non-reproductive and reproductive organs in female pigs: A review. *Food Addit. Contam.* **24(3)**, 306-314 (2007).

#### 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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