

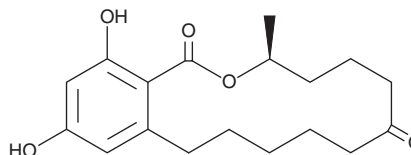
# PRODUCT INFORMATION



## Zearalanone

Item No. 19459

**CAS Registry No.:** 5975-78-0  
**Formal Name:** (3S)-3,4,5,6,9,10,11,12-octahydro-14,16-dihydroxy-3-methyl-1H-2-benzoxacyclotetradecin-1,7(8H)-dione  
**Synonyms:** ZAN, Zanone, (S)-Zearalanone  
**MF:** C<sub>18</sub>H<sub>24</sub>O<sub>5</sub>  
**FW:** 320.4  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 218, 265, 303 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Zearalanone is supplied as a crystalline solid. A stock solution may be made by dissolving the zearalanone in the solvent of choice. Zearalanone is very slightly soluble in chloroform.

### Description

Zearalanone is a mycotoxin, an estrogen receptor (ER) agonist, and an active metabolite of α-zearalanol (Item No. 23424) and the mycotoxin zearalenone (Item No. 11353).<sup>1,2</sup> Zearalanone induces reporter gene expression in *S. cerevisiae* expressing human ER (EC<sub>50</sub> = 110 nM).<sup>1</sup> It is also an androgen receptor antagonist (IC<sub>50</sub> = 1,540 nM for the human receptor).<sup>2</sup> It induces delayed maturation of primary bovine oocytes when used at a concentration of 30 µg/ml.<sup>3</sup> Zearalanone induces cytotoxicity in isolated phorbol 12-myristate 13-acetate-stimulated pig neutrophils (IC<sub>50</sub> = 53.1 µM). It increases intracellular superoxide levels when used at a concentration of 1 µM, and decreases IL-8 supernatant levels in the same cells at 10 µM.<sup>4</sup> Zearalanone has been found as a contaminant in harvested maize, sorghum, and wheat.<sup>5</sup>

### References

1. Le Guevel, R. and Pakdel, F. Assessment of oestrogenic potency of chemicals used as growth promoter by in-vitro methods. *Hum. Reprod.* **16**(5), 1030-1036 (2001).
2. Molina-Molina, J.M., Real, M., Jimenez-Diaz, I., et al. Assessment of estrogenic and anti-androgenic activities of the mycotoxin zearalenone and its metabolites using in vitro receptor-specific bioassays. *Food Chem. Toxicol.* **74**, 233-239 (2014).
3. Minervini, F., Dell'Aquila, M.E., Maritato, F., et al. Toxic effects of the mycotoxin zearalenone and its derivatives on in vitro maturation of bovine oocytes and 17 beta-estradiol levels in mural granulosa cell cultures. *Toxicol. In Vitro* **15**(4-5), 489-495 (2001).
4. Marin, D.E., Taranu, I., Burlacu, R., et al. Effects of zearalenone and its derivatives on the innate immune response of swine. *Toxicon* **56**(6), 956-953 (2010).
5. Aoyama, K., Ishikuro, E., Noriduki, H., et al. Formation ratios of zearalanone, zearalenols, and zearalanols versus zearalenone during incubation of *Fusarium semitectum* on sorghum and ratios in naturally contaminated sorghum. *Food Hyg. Saf. Sci.* **56**(6), 247-251 (2015).

#### 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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