

Product Data Sheet

Product Name: Zearalanone

Cat. No.: GC10684

Chemical Properties

Cas. No. 5975-78-0

Chemical Name (3S)-3,4,5,6,9,10,11,12-octahydro-14,16-dihydroxy-3-methyl-1H-2-benzoxacyclotetradecin-1,7(8H)-dione

SMILES OC1=C(C(O[C@@H](C)CCCC(CCCCC2)=O)=O)C2=CC(O)=C1

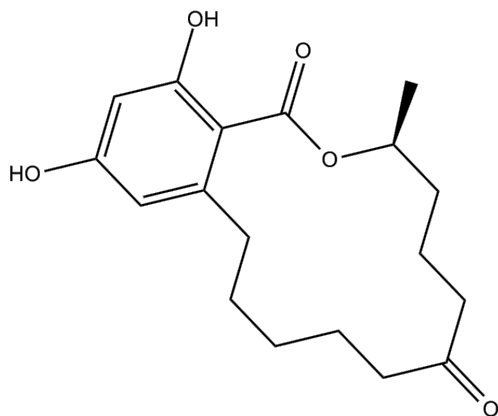
Formula $C_{18}H_{24}O_5$ M.Wt 320.4

Solubility DMSO : 100 mg/mL (312.13 mM; Need ultrasonic) Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Zearalanone (ZAN) is an estrogen receptor agonist and also an androgen receptor antagonist [1].

Zearalenone (ZEN), a β -resorcylic acid lactone (RAL), is a non-steroidal estrogenic mycotoxin biosynthesized by several *Fusarium* species. Zearalenone (ZEN) is the well-known mycotoxin present in numerous agricultural products [1][2][3][4]. In the human endometrial Ishikawa cell line,

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zearalenone (ZEN) exhibited strong oestrogenicity [4]. When incubated *Fusarium semitectum* on sorghum, the ratio of ZAN to ZEN remained constant after 5 days, suggesting that ZAN might not be suitable for use as an internal standard [5].

Zearalanone, a major phase I metabolite of zearalenone (ZEN), is an estrogen receptor agonist and also an androgen receptor antagonist. In MCF-7 cells, Zearalanone strongly induced cell proliferation with EC₅₀ value of 1.21 nM and showed significant estrogenic activity. Zearalanone behaved as full hER α agonist. In PALM cells, Zearalanone acted as a hAR antagonist that strongly inhibited the luciferase activity induced by 0.3 nM of R1881, the synthetic androgen [1].

References:

- [1]. Molina-Molina JM, 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.* 2014 Dec;74:233-9.
- [2]. Baldwin RS, Williams RD, Terry MK. Zeranone: a review of the metabolism, toxicology, and analytical methods for detection of tissue residues. *Regul Toxicol Pharmacol.* 1983 Mar;3(1):9-25.
- [3]. Migdalof BH, Dugger HA, Heider JG, et al. Biotransformation of zeranone: disposition and metabolism in the female rat, rabbit, dog, monkey and man. *Xenobiotica.* 1983 Apr;13(4):209-21.
- [4]. Le Guevel R, Pakdel F. Assessment of oestrogenic potency of chemicals used as growth promoter by in-vitro methods. *Hum Reprod.* 2001 May;16(5):1030-6.
- [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. *Shokuhin Eiseigaku Zasshi.* 2015;56(6):247-51.

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