

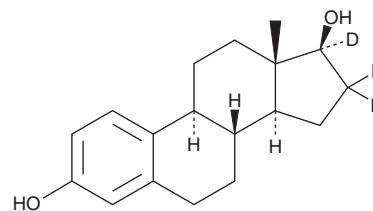
PRODUCT INFORMATION



17β-Estradiol-d₃

Item No. 38974

CAS Registry No.: 79037-37-9
Formal Name: estra-1,3,5(10)-triene-16,16,17-d₃-3,17β-diol
Synonyms: E₂-d₃, Estradiol-d₃, β-Estradiol-d₃, 17β-Oestradiol-d₃
MF: C₁₈H₂₁D₃O₂
FW: 275.4
Chemical Purity: ≥98% (17β-Estradiol)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A 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

17β-Estradiol-d₃ is intended for use as an internal standard for the quantification of 17β-estradiol (Item Nos. ISO60155 | 10006315) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

17β-Estradiol-d₃ is supplied as a solid. A stock solution may be made by dissolving the 17β-estradiol-d₃ in the solvent of choice, which should be purged with an inert gas. 17β-Estradiol-d₃ is soluble in ethanol and DMSO.

Description

17β-Estradiol is the major pre-menopausal bioactive estrogen and an active metabolite of testosterone.¹⁻³ It is produced primarily by the ovary, and to a lesser extent, by the adrenals, testes, and adipose tissue, as well as by the placenta during pregnancy.¹ 17β-Estradiol binds to estrogen receptors localized to the nucleus, cytoplasm, and plasma membrane and induces gene transcription or non-genomic intracellular signaling in a location-dependent manner.² It regulates reproductive development in females and spermatogenesis in males, as well as various non-reproductive processes including lipid and glucose homeostasis, bone mass maintenance, cognition, energy balance, and dilation of blood vessels.^{2,3} 17β-Estradiol deficiency due to hypogonadism or 17α-hydroxylase/17,20-lyase deficiency is associated with fatigue, incontinence, osteoporosis, depression, emotional instability, and hot flashes.

References

1. Mahboobifard, F., Pourgholami, M.H., Jorjani, M., *et al.* Estrogen as a key regulator of energy homeostasis and metabolic health. *Biomed. Pharmacother.* **156**, 113808 (2022).
2. Kumar, A., Banerjee, A., Sigh, D., *et al.* Estradiol: A steroid with multiple facets. *Horm. Metab. Res.* **50(5)**, 359-374 (2018).
3. Sabah-Negah, S., Hajali, V., Moradi, H.R., *et al.* The impact of estradiol on neurogenesis and cognitive functions in Alzheimer's disease. *Cell Mol. Neurobiol.* **40(3)**, 283-299 (2019).

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.

WARRANTY AND LIMITATION OF REMEDY

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