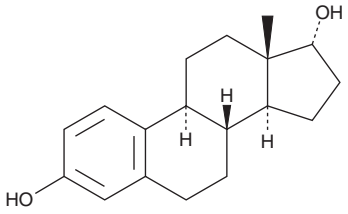
PRODUCT INFORMATION

17α-Estradiol

Item No. 20776

CAS Registry No.:	57-91-0
Formal Name:	(17α)-estra-1,3,5(10)-triene-3,17-diol
Synonyms:	Alfatradiol, α-Estradiol, 17-*epi* Estradiol, NSC 20293, 17α-Oestradiol
MF:	$C_{18}H_{24}O_2$
FW:	272.4
Purity:	≥98%
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

17α-Estradiol is supplied as a crystalline solid. A stock solution may be made by dissolving the 17α-estradiol in the solvent of choice, which should be purged with an inert gas. 17α-Estradiol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 17α-estradiol in ethanol is approximately 2.5 mg/ml and approximately 20 mg/ml in DMSO and DMF.

17α-Estradiol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 17α-estradiol should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 17α-Estradiol has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

17α-Estradiol is the natural optical isomer of 17β-estradiol (Item No. 10006315), the major estrogen secreted by the premenopausal ovary. 17α-Estradiol is a less active isomer than its counterpart, displaying 100-fold lower estrogenic activity relative to 17β-estradiol.[1] It can inhibit 5α-reductase, which plays a role in regulating hair growth. 17α -estradiol is reported to activate the MAPK/ERK and PI3K-Akt signaling pathways *via* activation of the estrogen receptor-X and has been shown to be neuroprotective after an ischemic stroke and oxidative stress and in transgenic mice with Alzheimer's disease.[1,2]

References

1. Toran-Allerand, C.D., Tinnikov, A.A., Singh, R.J., *et al.* 17α-estradiol: A brain-active estrogen? *Endocrinology* **146(9)**, 3843-3850 (2005).
2. Green, P.S., Bishop, J., and Simpkins, J.W. 17α-estradiol exerts neuroprotective effects on SK-N-SH cells. *J. Neurosci.* **17(2)**, 511-515 (1997).

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