

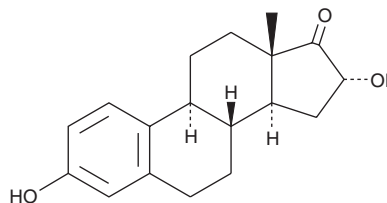
PRODUCT INFORMATION



16 α -hydroxy Estrone

Item No. 15208

CAS Registry No.: 566-76-7
Formal Name: 3,16 α -dihydroxy-estra-1,3,5(10)-trien-17-one
Synonyms: 16 α -hydroxy E₁, 16 α -OHE₁
MF: C₁₈H₂₂O₃
FW: 286.4
Purity: $\geq 98\%$
UV/Vis.: λ_{max} : 281 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

16 α -hydroxy Estrone is supplied as a crystalline solid. A stock solution may be made by dissolving the 16 α -hydroxy estrone in the solvent of choice, which should be purged with an inert gas. 16 α -hydroxy Estrone is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of 16 α -hydroxy estrone in DMSO and DMF is approximately 20 and 30 mg/ml, respectively.

16 α -hydroxy Estrone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 16 α -hydroxy estrone should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 16 α -hydroxy Estrone has a solubility of approximately 0.15 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

The naturally-occurring estrogens are estrone (E₁, Item No. 10006485), estradiol (E₂, Item No. 10006315), and estriol (E₃, Item No. 10006484).¹ 16 α -hydroxy Estrone (16 α -OHE₁) is a hydroxylated metabolite of E₁ as well as an interconversion product with E₂.^{2,3} E₁ is 16 α -hydroxylated by cytochrome P450 (CYP) isoforms, including CYP1A1, CYP3A5, CYP3A4, and CYP3A7, with CYP3A5 being breast-specific.⁴ 16 α -OHE₁ is sulphatized or glucuronidated before excretion.⁴ It is increased in rheumatoid arthritis and decreased by physical activity.^{2,3} Unlike the parent estrogens and other hydroxylated metabolites of E₁, 16 α -OHE₁ binds covalently and persistently activates estrogen receptors.⁵ In addition, this metabolite increases cell proliferation and does not suppress TNF- α secretion, whereas other estrogen metabolites are not proliferative and have marked effects on TNF- α secretion.^{2,4} The levels of 16 α -OHE₁ are increased in some forms of hormone therapy.⁶ Because hormone therapy increases breast cancer risk, 16 α -OHE₁ has been implicated as a risk factor for breast cancer, although supportive data remains elusive.^{4,6,7}

References

1. Gruber, C.J., Tschugguel, W., Schneeberger, C., et al. *N. Engl. J. Med.* **346**(5), 340-352 (2002).
2. Cutolo, M., Sulli, A., and Straub, R.H. *Autoimmun. Rev.* **11**(6-7), A460-A464 (2012).
3. Matthews, C.E., Fortner, R.T., Xu, X., et al. *J. Clin. Endocrinol. Metab.* **97**(10), 3724-3733 (2012).
4. Obi, N., Wrieling, A., Heinz, J., et al. *Int. J. Women's Health* **3**, 37-51 (2011).
5. Swaneck, G.E. and Fishman, J. *Proc. Natl. Acad. Sci. USA* **85**(21), 7831-7835 (1988).
6. Mackey, R.H., Fanelli, T.J., *Cancer Epidemiol. Biomarkers Prev.* **21**(11), 2022-2032 (2012).
7. Okobia, M.N. and Bunker, C.H. *Afr. J. Reprod. Health* **10**(1), 13-25 (2006).

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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/23/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM