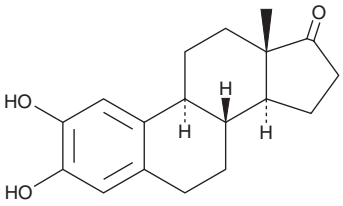
PRODUCT INFORMATION

2-hydroxy Estrone

Item No. 34154

CAS Registry No.: 362-06-1
Formal Name: 2,3-dihydroxy-estra-1,3,5(10)-trien-17-one
Synonyms: Catecholestrone, 2-hydroxy E_1, 2-OHE_1
MF: $C_{18}H_{22}O_3$
FW: 286.4
Purity: ≥95%
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

2-hydroxy Estrone is supplied as a solid. A stock solution may be made by dissolving the 2-hydroxy estrone in the solvent of choice, which should be purged with an inert gas. 2-hydroxy Estrone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 2-hydroxy estrone in these solvents is approximately 30 mg/ml.

2-hydroxy Estrone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 2-hydroxy estrone should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 2-hydroxy estrone has a solubility of approximately 0.33 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

2-hydroxy Estrone is an active metabolite of the endogenous estrogen estrone (Item No. 10006485).[1] It is formed from estrone primarily by the cytochrome P450 (CYP) isoforms CYP1A2, CYP1A1, and CYP1B1 and metabolized to 2-methoxy estrone (Item No. 34155) by catechol-O-methyltransferase (COMT). 2-hydroxy Estrone (10 µM) inhibits the proliferation of estrogen receptor-positive MCF-7, but not estrogen receptor-negative MDA-MB-231, breast cancer cells cultured with the COMT inhibitor quinalizarin.[2] It inhibits iron-ADP-adriamycin complex-induced lipid peroxidation of liposomes prepared from rat liver microsomes (IC_{50} = 2.7 µM).[3]

References

1. Cribb, A.E., Knight, M.J., Dryer, D., *et al.* Role of polymorphic human cytochrome P450 enzymes in estrone oxidation. *Cancer Epidemiol. Biomarkers Prev.* **15(3)**, 551-558 (2006).
2. Schneider, J., Huh, M.M., Bradlow, H.L., *et al.* Antiestrogen action of 2-hydroxyestrone on MCF-7 human breast cancer cells. *J. Biol. Chem.* **259(8)**, 4840-4845 (1984).
3. Nakano, M., Sugioka, K., Naito, I., *et al.* Novel and potent biological antioxidants on membrane phospholipid peroxidation: 2-Hydroxy estrone and 2-hydroxy estradiol. *Biochem. Biophys. Res. Commun.* **142(3)**, 919-924 (1987).

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