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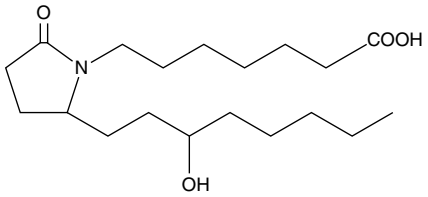
Product Information

CAY10580

Item No. 16835

CAS Registry No.: 64054-40-6
Formal Name: 2-(3-hydroxyoctyl)-5-oxo-1-pyrrolidineheptanoic acid
MF: $C_{19}H_{35}NO_4$
FW: 341.5
Purity: ≥96%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that CAY10580 be stored as supplied at -20°C. It should be stable for at least one year.

CAY10580 is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of CAY10580 in these solvents is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of CAY10580 is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of CAY10580 in PBS, pH 7.2, is approximately 2.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Prostaglandin E_2 (PGE_2) activates four E prostanoid (EP) receptors, $EP_{1\text{-}4}$. EP_4 is a G_s protein-coupled receptor that, by elevating the second messenger cAMP, plays important roles in bone formation and resorption, cancer, and atherosclerosis.[1-3] CAY10580 is an 8-aza-9-oxo-15-hydroxy saturated analog of PGE_2. It selectively binds the EP_4 receptor (K_i = 35 nM) relative to the EP_1, EP_2, and EP_3 receptors (K_i = 3,000, 2,000, and >3,000 nM, respectively).[4] CAY10580 stimulates cAMP formation in excised mouse ovaries.[5]

References

1. Li, M., Thompson, D.D., and Paralkar, V.M. Prostaglandin E_2 receptors in bone formation. *International Orthopaedics* **31**, 767-772 (2007).
2. Hawcroft, G., Ko, C.W.S., and Hull, M.A. Prostaglandin E_2-EP_4 receptor signalling promotes tumorigenic behaviour of HT-29 human colorectal cancer cells. *Oncogene* **26**, 3006-3019 (2007).
3. Babaev, V.R., Chew, J.D., Ding, L., *et al.* Macrophage EP_4 deficiency increases apoptosis and suppresses early atherosclerosis. *Cell Metabolism* **8**, 492-501 (2008).
4. Billot, X., Chateauneuf, A., Chauret, N., *et al.* Discovery of a potent and selective agonist of the prostaglandin EP_4 receptor. *Bioorg. Medicinal Chem. Letter.* **13**, 1129-1132 (2003).
5. Smith, R.L., Lee, T., Gould, N.P., *et al.* Prostaglandin isosteres. 1. (8-Aza-, 8,10-Diaza-, and 8-Aza-11-thia)-9-oxoprostanoic acids and their derivatives. *J. Med. Chem.* **20(10)**, 1292-1299 (1977).

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