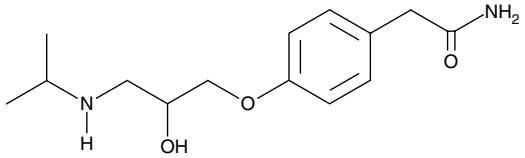
Product Information

(R,S)-Atenolol

Item No. 17250

CAS Registry No.: 29122-68-7
Formal Name: 4-[2-hydroxy-3-[(1-methylethyl)amino] propoxy]-benzeneacetamide
Synonyms: Duraatenol, IC I66082, Tenormin®
MF: $C_{14}H_{22}N_2O_3$
FW: 266.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 227, 277, 283 nm



Laboratory Procedures

For long term storage, we suggest that (R,S)-atenolol be stored as supplied at -20°C. It should be stable for at least two years.

(R,S)-Atenolol is supplied as a crystalline solid. A stock solution may be made by dissolving the (R,S)-atenolol in the solvent of choice. (R,S)-Atenolol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of (R,S)-atenolol in these solvents is approximately 5, 15, and 20 mg/ml, respectively.

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. Organic solvent-free aqueous solutions of (R,S)-atenolol can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (R,S)-atenolol in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

(R,S)-Atenolol is a β_1-adrenergic receptor antagonist with K_i values of 1.14 and 48.7 µM for β_1 and β_2, respectively.[1] It has been reported that only the (S) enantiomer contributes to the beta-blocking effects of racemic atenolol.[2,3] Beta-blockers, including atenolol, have diverse applications in cardiology and vascular disease.[4]

References

1. Golf, S., Bjųrnerheim, R., Erichsen, A., *et al.* Relative selectivity of different β-adrenoceptor antagonists for human heart β_1- and β_2-receptor subtypes assayed by a radioligand binding technique. *Scand. J. Clin. Lab. Invest.* **47(7)**, 719-723 (1987).
2. Stoschitzky, K., Egginger, G., Zernig, G., *et al.* Stereoselective features of (R)- and (S)-atenolol: Clinical pharmacological, pharmacokinetic, and radioligand binding studies. *Chirality* **5(1)**, 15-9 (1993).
3. Mehvar, R. and Brocks, D.R. Stereospecific pharmacokinetics and pharmacodynamics of beta-adrenergic blockers in humans. *J. Pharm. Pharm. Sci.* **4(2)**, 185-200 (2001).
4. Baker, J.G. The selectivity of β-adrenoceptor antagonists at the human β_1, β_2 and β_3 adrenoceptors. *Br. J. Pharmacol.* **144(3)**, 317-322 (2005).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/17250

Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com