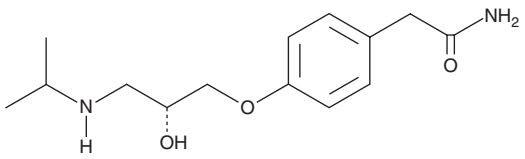
PRODUCT INFORMATION

(+)-Atenolol

Item No. 18623

CAS Registry No.: 56715-13-0
Formal Name: 4-[(2R)-2-hydroxy-3-[(1-methylethyl) amino]propoxy]-benzeneacetamide
Synonym: (R)-Atenolol
MF: $C_{14}H_{22}N_2O_3$
FW: 266.3
Purity: ≥98%
UV/Vis.: λ_{max}: 226, 276 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

(+)-Atenolol is supplied as a crystalline solid. A stock solution may be made by dissolving the (+)-atenolol in the solvent of choice, which should be purged with an inert gas. (+)-Atenolol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of (+)-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 (+)-atenolol can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (+)-atenolol in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(+)-Atenolol is an enantiomer of the β_1-adrenergic receptor (β_1-AR) antagonist (±)-atenolol (Item No. 17250).[1] (+)-Atenolol inhibits radioligand binding to β-ARs on sarcolemma-enriched membranes (K_i = 8.61 µM). Unlike (–)-atenolol and (±)-antenolol, (+)-atenolol has no effect on blood pressure in spontaneously hypertensive rats.[2,3]

References

1. 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).
2. Richer, C., Boissier, J.R., and Giudicelli, J.F. Chronic atenolol treatment and hypertension development in spontaneously hypertensive rats. *Eur. J. Pharmacol.* **47(4)**, 393-400 (1978).
3. Pearson, A.A., Gaffney, T.E., Walle, T., *et al.* A stereoselective central hypotensive action of atenolol. *J. Pharmacol. Exp. Ther.* **250(3)**, 759-763 (1989).

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