PRODUCT INFORMATION

Nebivolol (hydrochloride)
Item No. 23660

CAS Registry No.: 152520-56-4
Formal Name: (αR,α′R,2R,2′S)-rel-α,α′-[iminobis(methylene)]
     bis[6-fluoro-3,4-dihydro-2H-1-benzopyran-2-
     methanol, monohydrochloride
MF: C22H25F2NO4 • HCl
FW: 441.9
Purity: ≥98%
UV/Vis.: λmax: 281 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Nebivolol (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the nebulol (hydrochloride) in the choice of organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of nebulol (hydrochloride) in these solvents is approximately 0.5, 30, and 20 mg/ml, respectively.

Description

Nebivolol is a potent and selective β1-adrenergic receptor (β1-AR) antagonist (IC50 = 7.41 and 251 nM for β1- and β2-ARs, respectively in a radioligand binding assay using rabbit lung membrane preparations). It is also selective for β1-ARs over serotonin (5-HT 5-HT1A and 5-HT2, α1- and α2-adrenergic, histamine H1, and dopamine D2 receptors (IC50 = 27.5 and 2,239, 3,162 and >10,000, 5,623, and 10,000 nM, respectively). Nebivolol inhibits cAMP accumulation induced by norepinephrine (Item No. 16673) in primary rat cardiac cells (IC50 = 22 nM) and induces vasodilation in mouse renal arteries via a nitric oxide- and cGMP-dependent mechanism (EC50 = 11.36 μM). It decreases contraction of isolated human left ventricular trabeculae induced by isoproterenol (Item No. 15592; IC50 = 7.0 μM) but does not exert intrinsic sympathomimetic activity (ISA). Nebivolol inhibits proliferation of human coronary artery smooth muscle cells (HCASMCs) in the presence and absence of growth factors (IC50 = 6.1, 6.8, 6.4, and 7.7 μM for HCASMCs grown in media containing no growth factor, PDGFB, basic FGF, and TGF-β1, respectively). Formulations containing nebulol have been used to treat hypertension.

References


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.

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