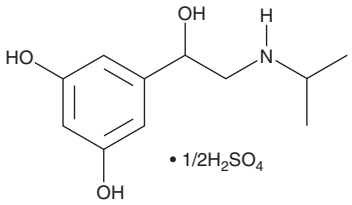
PRODUCT INFORMATION

Metaproterenol (hemisulfate)

Item No. 23611

CAS Registry No.: 5874-97-5
Formal Name: 5-[1-hydroxy-2-[(1-methylethyl)amino] ethyl]-1,3-benzenediol, hemisulfate
Synonyms: dl-Metaproterenol, dl-Orciprenaline
MF: $C_{11}H_{17}NO_3 \bullet 1/2H_2SO_4$
FW: 260.3
Purity: ≥98%
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

Metaproterenol (hemisulfate) is supplied as a crystalline solid. A stock solution may be made by dissolving the metaproterenol (hemisulfate) in the solvent of choice. Metaproterenol (hemisulfate) is soluble in the organic solvent DMSO, which should be purged with an inert gas. The solubility of metaproterenol (hemisulfate) in DMSO is approximately 1 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. Organic solvent-free aqueous solutions of metaproterenol (hemisulfate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of metaproterenol (hemisulfate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Metaproterenol is a β_2-adrenergic receptor (β_2-AR) agonist with bronchodilator actions.[1] It inhibits TGF-α-induced hepatocyte DNA synthesis and proliferation *in vitro* (IC_{50} = 15 nM), an effect that is reversed by the β_2-AR antagonist butoxamine but not the β_1-AR antagonist metoprolol (Item No. 15429).[2] Metaproterenol dose-dependently relaxes lung strips and increases heart rate and inotropy of right atria and left atria, respectively, isolated from guinea pig (pD_2s = 6.4, 7.08, and 6.61, respectively).[3] Formulations containing metaproterenol were previously used as long-acting bronchodilators for the treatment of asthma.

References

1. Svensson, L.Å. Sympathomimetic bronchodilators: Increased selectivity with lung-specific prodrugs. *Pharm. Res.* **2(4)**, 156-162 (1985).
2. Kimura, M., and Ogihara, M. Stimulation by transforming growth factor-α of DNA synthesis and proliferation of adult rat hepatocytes in primary cultures: modulation by α- and β-adrenoceptor agonists. *J. Pharmacol. Exp. Ther.* **291(1)**, 171-180 (1999).
3. Siegl, P.K.S., Rossi, G.V., and Orzechowski, R.F. Isolated lung strips of guinea pigs: Responses to β-adrenergic agonists and antagonists. *Eur. J. Pharmacol.* **54(1-2)**, 1-7 (1979).

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