

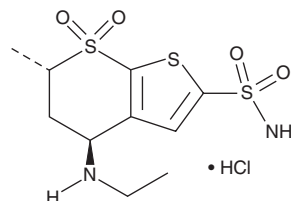
PRODUCT INFORMATION



Dorzolamide (hydrochloride)

Item No. 14616

CAS Registry No.: 130693-82-2
Formal Name: (4S,6S)-4-(ethylamino)-5,6-dihydro-6-methyl-4H-thieno[2,3-b]thiopyran-2-sulfonamide, 7,7-dioxide, monohydrochloride
Synonyms: L-671,152, MK-507
MF: C₁₀H₁₆N₂O₄S₃ • HCl
FW: 360.9
Purity: ≥98%
UV/Vis.: λ_{max}: 255 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

Dorzolamide (hydrochloride) is supplied as a crystalline solid. Aqueous solutions of dorzolamide (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of dorzolamide (hydrochloride) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Dorzolamide is an inhibitor of carbonic anhydrase (CA), inhibiting CAII, CAV, CAVI, CAIX, CAXII, CAXIII, and CAXIV with K_i values ranging from 3.5 to 52 nM.¹⁻³ It is selective for these isoforms over CAI, CAIII, and CAIV (K_is = 50, 8, and 8.5 μM, respectively).¹ Dorzolamide inhibits carbonic anhydrase in isolated rabbit iris-ciliary body by 87% when used at a concentration of 0.02%.³ It also reduces intraocular pressure in an α-chymotrypsin-treated rabbit model of ocular hypertension and in normotensive rabbits when applied topically at a concentration of 0.5%.³ Formulations containing dorzolamide have been used in the treatment of glaucoma.^{4,5}

References

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2. Greer, J., Erickson, J.W., Baldwin, J.J., et al. Application of the three-dimensional structures of protein target molecules in structure-based drug design. *J. Med. Chem.* **37(8)**, 1035-1054 (1994).
3. Hunt, C.A., Mallorga, P.J., Michelson, S.R., et al. 3-Substituted thieno[2,3-b][1,4]thiazine-6-sulfonamides. A novel class of topically active carbonic anhydrase inhibitors. *J. Med. Chem.* **37(2)**, 240-247 (1994).
4. Loftsson, T., Jansook, P., and Stefánsson, E. Topical drug delivery to the eye: Dorzolamide. *Acta Ophthalmol.* **90(7)**, 603-608 (2012).
5. Cheng, J.-W., Cheng, S.-W., Gao, L.-D., et al. Intraocular pressure-lowering effects of commonly used fixed-combination drugs with Timolol: A systematic review and meta-analysis. *PLoS One* **7(9)**, 45079 (2012).

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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