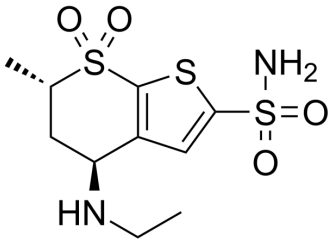
Dorzolamide

Cat. No.:	HY-B0109
CAS No.:	120279-96-1
Molecular Formula:	$C_{10}H_{16}N_2O_4S_3$
Molecular Weight:	324.44
Target:	Carbonic Anhydrase
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Dorzolamide (L671152) is a potent carbonic anhydrase II inhibitor, with IC_{50} values of 0.18 nM and 600 nM for red blood cell CA-II and CA-I respectively. Dorzolamide possesses anti-tumor activity[1].
In Vitro	Component A, caused by an inward flux of CO2 and its subsequent hydration by CA-II, is blocked by Dorzolamide in a dose-dependent manner with an 50% inhibitory concentration IC_{50} of 2.4 μM (95% confidence interval: 0.5-10.85 μM)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Dorzolamide (3, 10, or 30 mg/kg/day, ip) synergized mitomycin C exhibits anti-tumor activity in EAC solid tumor models. Dorzolamide produces a dose-dependent decrease in the calculated ratio (relative value of 57.3±1, 25.5±1.8, and 24.3± 0.7 %, respectively)[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female Swiss albino mice (EAC solid tumor)[3].
Dosage:	3, 10, or 30 mg/kg/day (synergized mitomycin C).
Administration:	IP, daily for 3 weeks.
Result:	Upregulated TXNIP and p53 while downregulated bcl-2. Effective in retarding the growth of EAC in mice.

CUSTOMER VALIDATION

- Anal Chem. 2020 Dec 15;92(24):15745-15756.
- J Pharmaceut Biomed. 2020, 113870.
- ETH Zurich. 2020 Dec.

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REFERENCES

[1]. J Biollaz, et al. Whole-blood pharmacokinetics and metabolic effects of the topical carbonic anhydrase inhibitor dorzolamide. Eur J Clin Pharmacol. 1995;47(5):455-60.

[2]. Sangly P Srinivas, et al. Inhibition of carbonic anhydrase activity in cultured bovine corneal endothelial cells by dorzolamide. Invest Ophthalmol Vis Sci. 2002 Oct;43(10):3273-8.

[3]. Belal M Ali, et al. Dorzolamide synergizes the antitumor activity of mitomycin C against Ehrlich's carcinoma grown in mice: role of thioredoxin-interacting protein. Naunyn Schmiedebergs Arch Pharmacol. 2015 Dec;388(12):1271-82.

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