# Apraclonidine hydrochloride

**Cat. No.:** HY-12720A

**CAS No.:** 73218-79-8

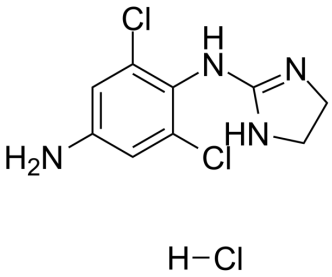
**Molecular Formula:** $C_9H_{11}Cl_3N_4$

**Molecular Weight:** 281.57

**Target:** Adrenergic Receptor

**Pathway:** GPCR/G Protein; Neuronal Signaling

**Storage:** 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 125 mg/mL (443.94 mM; Need ultrasonic)
$H_2O$ : ≥ 12.5 mg/mL (44.39 mM)
* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 3.5515 mL | 17.7576 mL | 35.5151 mL |
| 5 mM | 0.7103 mL | 3.5515 mL | 7.1030 mL |
| 10 mM | 0.3552 mL | 1.7758 mL | 3.5515 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (7.39 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.39 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Apraclonidine hydrochloride (ALO 2145), a selective α2 and weak α1 receptor agonist activity, effectively lowers intraocular pressure (IOP) in human eyes. Apraclonidine hydrochloride is a topical ophthalmic solution and has the ability to elevate the eye lid[1][2].

**In Vitro**

Apraclonidine hydrochloride (ALO 2145) is more commonly used topically for glaucoma, as it penetrates the cornea and blood-brain barrier to a lesser extent and, thus, has fewer adverse systemic effects[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

Apraclonidine hydrochloride (ALO 2145) is effective in animal models of elevated IOP as well as glaucoma in humans. The

ocular hypotensive effects of Apraclonidine are usually attributed to reduced aqueous humor synthesis and vasoconstrictor actions at the anterior segment branches of the ophthalmic artery[2]
.Apraclonidine (1.15%, single instillation) inhibits 98% of PGE2-induced aqueous flare elevationy[3]
.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | male rabbits[3]. |
| Dosage: | 1.15% |
| Administration: | Apraclonidine (1.15%, single instillation) |
| Result: | Inhibited PGE2-induced elevation of aqueous flare in pigmented rabbits. |

## REFERENCES


[1]. Yoriko Hayasaka, et al. Effects of topical antiglaucoma eye drops on prostaglandin E(2)-induced aqueous flare elevation in pigmented rabbits. Invest Ophthalmol Vis Sci

[2]. Wijemanne S, et al. Apraclonidine in the treatment of ptosis. J Neurol Sci. 2017;376:129-132.

[3]. Searles RV, et al. Aqueous humor dynamics in anesthetized rats infused with intracameral apraclonidine. Pharmacology. 1999;58(4):220-226.





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