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- Trockeneiszuschlag
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- Expressversand

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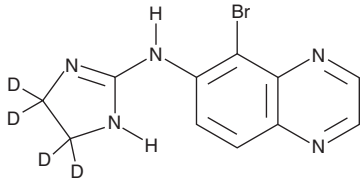
PRODUCT INFORMATION

Brimonidine-d_4

Item No. 25465

CAS Registry No.: 1184971-51-4
Formal Name: 5-bromo-N-(4,5-dihydro-1H-imidazol-2-yl-4,4,5,5-d_4)quinoxalin-6-amine
MF: $C_{11}H_6BrD_4N_5$
FW: 296.2
Chemical Purity: ≥98% (Brimonidine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A 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

Brimonidine-d_4 is intended for use as an internal standard for the quantification of brimonidine (Item No. 15426) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Description

Brimonidine is an agonist of α_2-adrenergic receptors (α_2-ARs; K_is = 2.7, 52, and 44 nM for α_{2A}, α_{2B}, and α_{2C}-ARs, respectively, in CHO cells).[1] It is selective for α_2-ARs over α_1-ARs (K_i = 1,800 nM in human brain). Brimonidine lowers intraocular pressure in DBA/2J mice, a model of glaucoma, to control levels when applied topically to the eye as a 0.1% solution.[2] It also inhibits glutamate release, prevents upregulation of NMDA receptors containing NR1 and NR2A subunits, and protects rat retinal ganglion cells against glutamate excitotoxicity in a rat model of retinal ischemia when administered at a dose of 1 mg/kg per day.[3] Formulations containing brimonidine have been used in the treatment of open-angle glaucoma and ocular hypertension.

References

1. Munk, S.A., Harcourt, D.A., Arasasingham, P.N., *et al.* Synthesis and evaluation of 2-(arylamino)imidazoles as α_2-adrenergic agonists. *J. Med. Chem.* **40(1)**, 18-23 (1997).
2. Sawada, K., Hiraoka, M., and Ohguro, H. Effect of antiglaucoma medicine on intraocular pressure in DBA/2J mice. *Ophthalmic Res.* **55(4)**, 205-211 (2016).
3. Lee, D., Kim, K.Y., Noh, Y.H., *et al.* Brimonidine blocks glutamate excitotoxicity-induced oxidative stress and preserves mitochondrial transcription factor A in ischemic retinal injury. *PLoS One* **7(10)**, e47098 (2012).

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