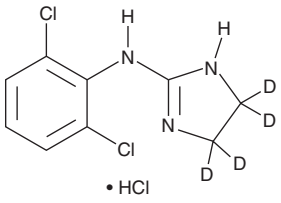
PRODUCT INFORMATION

Clonidine-d_4 (hydrochloride)

Item No. 28519

CAS Registry No.: 67151-02-4
Formal Name: N-(2,6-dichlorophenyl)-4,5-dihydro-d_2-1H-imidazol-4,5-d_2-2-amine, monohydrochloride
MF: $C_9H_5Cl_2D_4N_3 \bullet HCl$
FW: 270.6
Chemical Purity: ≥95% (Clonidine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A 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

Clonidine-d_4 (hydrochloride) is intended for use as an internal standard for the quantification of clonidine (Item No. 15949) 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).

Clonidine-d_4 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the clonidine-d_4 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Clonidine-d_4 (hydrochloride) is slightly soluble in DMSO and methanol.

Description

Clonidine is an agonist of α_2-adrenergic receptors (α_2-ARs;K_is = 61.66, 69.18, and 134.9 nM for α_{2A}-, α_{2B}-, and α_{2C}-ARs, respectively).[1] It stimulates [^{35}S]GTPγS binding to HEK293 cell membranes expressing the human receptors with EC_{50} values of 26.92, 56.23, and 912.01 nM for α_{2A}-, α_{2B}-, and α_{2C}-ARs, respectively. Clonidine also binds to I_1-imidazoline sites in a variety of cell and tissue types (K_ds = 4-15 nM).[2] It induces relaxation of isolated mesenteric artery rings precontracted with norepinephrine (Item No. 16673) when used at a concentration of 10 µM.[3] Clonidine (10 µM) also induces membrane hyperpolarization and reduces norepinephrine-induced depolarization in isolated mesenteric artery rings. Clonidine (0.1 and 1 µg/kg) reduces mean blood pressure and heart rate when administered *via* microinjection to the nucleus reticularis lateralis (NRL) of anesthetized normotensive cats.[4] Formulations containing clonidine have been used in the treatment of hypertension.

References

1. Jasper, J.R., Lesnick, J.D., Chang, L.K., *et al.* Ligand efficacy and potency at recombinant α_2 adrenergic receptors: Agonist-mediated [^{35}S]GTPγS binding. *Biochem. Pharmacol.* **55(7),** 1035-1043 (1998).
2. Ernsberger, P., Graves, M.E., Graff, L.M., *et al.* I_1-imidazoline receptors. Definition, characterization, distribution, and transmembrane signaling. *Ann. N.Y. Acad. Sci.* **763(1),** 22-42 (1995).
3. Silva, E.G., Feres, T., Vianna, L.M., *et al.* Dual effect of clonidine on mesenteric artery adrenoceptors: Agonistic (alpha-2) and antagonistic (alpha-1). *J. Pharmacol. Exp. Ther.* **277(2),** 872-876 (1996).
4. Bousquet, P., Feldman, J., and Schwartz, J. Central cardiovascular effects of alpha adrenergic drugs: Differences between catecholamines and imidazolines. *J. Pharmacol. Exp. Ther.* **2301(1),** 232-236 (1984).

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