



# SZABO SCANDIC

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## Produktinformation



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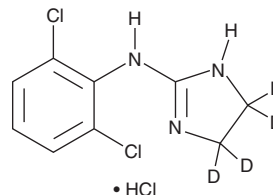
# PRODUCT INFORMATION



## Clonidine-d<sub>4</sub> (hydrochloride)

Item No. 28519

**CAS Registry No.:** 67151-02-4  
**Formal Name:** N-(2,6-dichlorophenyl)-4,5-dihydro-d<sub>2</sub>-1H-imidazol-4,5-d<sub>2</sub>-2-amine, monohydrochloride  
**MF:** C<sub>9</sub>H<sub>5</sub>Cl<sub>2</sub>D<sub>4</sub>N<sub>3</sub> • HCl  
**FW:** 270.6  
**Chemical Purity:** ≥95% (Clonidine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**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

Clonidine-d<sub>4</sub> (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<sub>4</sub> (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the clonidine-d<sub>4</sub> (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Clonidine-d<sub>4</sub> (hydrochloride) is slightly soluble in DMSO and methanol.

### Description

Clonidine is an agonist of  $\alpha_2$ -adrenergic receptors ( $\alpha_2$ -ARs;  $K_{iS}$  = 61.66, 69.18, and 134.9 nM for  $\alpha_{2A}$ -,  $\alpha_{2B}$ -, and  $\alpha_{2C}$ -ARs, respectively).<sup>1</sup> It stimulates [<sup>35</sup>S]GTP $\gamma$ S binding to HEK293 cell membranes expressing the human receptors with EC<sub>50</sub> values of 26.92, 56.23, and 912.01 nM for  $\alpha_{2A}$ -,  $\alpha_{2B}$ -, and  $\alpha_{2C}$ -ARs, respectively. Clonidine also binds to I<sub>1</sub>-imidazoline sites in a variety of cell and tissue types ( $K_{iS}$  = 4-15 nM).<sup>2</sup> It induces relaxation of isolated mesenteric artery rings precontracted with norepinephrine (Item No. 16673) when used at a concentration of 10  $\mu$ M.<sup>3</sup> Clonidine (10  $\mu$ M) also induces membrane hyperpolarization and reduces norepinephrine-induced depolarization in isolated mesenteric artery rings. Clonidine (0.1 and 1  $\mu$ g/kg) reduces mean blood pressure and heart rate when administered *via* microinjection to the nucleus reticularis lateralis (NRL) of anesthetized normotensive cats.<sup>4</sup> 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  $\alpha_2$  adrenergic receptors: Agonist-mediated [<sup>35</sup>S]GTP $\gamma$ S binding. *Biochem. Pharmacol.* **55(7)**, 1035-1043 (1998).
2. Ernsberger, P., Graves, M.E., Graff, L.M., *et al.* I<sub>1</sub>-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.* **230(1)**, 232-236 (1984).

#### 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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