# PRODUCT INFORMATION

## ST 91

*Item No. 43562*

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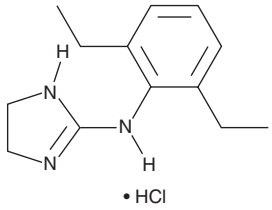
| **CAS Registry No.:** | 4749-61-5 |
| **Formal Name:** | N-(2,6-diethylphenyl)-4,5-dihydro-1H-imidazol-2-amine, monohydrochloride |
| **MF:** | $C_{13}H_{19}N_3$ • HCl |
| **FW:** | 253.8 |
| **Purity:** | ≥98% |
| **Supplied as:** | A solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |




*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

ST 91 is supplied as a solid. A stock solution may be made by dissolving the ST 91 in the solvent of choice, which should be purged with an inert gas. ST 91 is soluble (≥10 mg/ml) in ethanol and DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of ST 91 can be prepared by directly dissolving the solid in aqueous buffers. ST 91 is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

ST 91 is an agonist of $\alpha_2$-adrenergic receptors ($\alpha_2$-ARs).[1] It induces cAMP accumulation in HEK293 cells expressing $\alpha_{2A}$-, $\alpha_{2B}$-, or $\alpha_{2C}$-ARs ($EC_{50s}$ = 155, 371, and 851 nM, respectively). ST 91 (100 nM) inhibits isoproterenol-induced relaxation in phenylephrine-precontracted isolated rat mesenteric arterial rings.[2] Intrathecal administration of ST 91 (10 and 30 µg/animal) reduces paw flinching in the first and second phases of the formalin test in rats.[3] It increases plasma atrial natriuretic peptide (ANP) levels, urinary output, and sodium, potassium, and cGMP excretion in conscious rats when administered at a dose of 250 µg/animal.[4]

### 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 [$^{35}$S]GTPγS binding. *Biochem. Pharmacol.* **55(7)**, 1035-1043 (1998).
2. Kató, E., Lipták, L., Shujaa, N., *et al.* $\alpha_{2B}$-adrenoceptor agonist ST-91 antagonizes $\beta_2$-adrenoceptor-mediated relaxation in rat mesenteric artery rings. *Eur. J. Pharmacol.* **580(3)**, 361-365 (2008).
3. Nazarian, A., Christianson, C.A., Hua, X.-Y., *et al.* Dexmedetomidine and ST-91 analgesia in the formalin model is mediated by $\alpha_{2A}$-adrenoceptors: A mechanism of action distinct from morphine. *Br. J. Pharmacol.* **155(7)**, 1117-1126 (2008).
4. Gutkowska, J., Mukaddam-Daher, S., and Tremblay, J. The peripheral action of clonidine analog ST-91: Involvement of atrial natriuretic factor. *J. Pharmacol. Exp. Ther.* **281(2)**, 670-676 (1997).





**CAYMAN CHEMICAL**
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
**PHONE:** [800] 364-9897
[734] 971-3335
**FAX:** [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM