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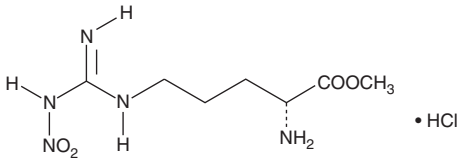
PRODUCT INFORMATION

D-NAME (hydrochloride)

Item No. 21687

CAS Registry No.: 50912-92-0
Formal Name: N^5-[imino(nitroamino)methyl]-D-ornithine, methyl ester, monohydrochloride
Synonyms: D-N^G-Nitroarginine methyl ester, N(G)-Nitro-D-Arginine methyl ester
MF: $C_7H_{15}N_5O_4$ • HCl
FW: 269.7
Purity: ≥95%
UV/Vis.: λ_{max}: 210, 269 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

D-NAME (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the D-NAME (hydrochloride) in the solvent of choice. D-NAME (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of D-NAME (hydrochloride) in these solvents is approximately 20 mg/ml.

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 D-NAME (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-NAME (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

N(G)-Nitro-D-arginine methyl ester (D-NAME) is the less active enantiomer of the nitric oxide (NO) synthase inhibitor N(G)-nitro-L-arginine methyl ester (L-NAME; Item No. 80210). D-NAME was initially thought to be inactive and was often used as a negative control for L-NAME.[1,2] Later studies showed that D-NAME (40 mg/kg/day in rats) can have similar but less pronounced effects as L-NAME (40 mg/kg/day in rats) in the cardiovascular system, particularly at long-term timepoints.[3] D-NAME (3-10 µg/mouse) had no effect on nociception in mice assessed using the tail flick test.[4]

References

1. Palmer, R.M.J., Rees, D.D., Ashton, D.S., *et al.* L-arginine is the physiological precursor for the formation of nitric oxide in endothelium-dependent relaxation. *Biochem. Biophys. Res. Commun.* **153(3)**, 1251-1256 (1988).
2. Chinellato, A., Froldi, G., Caparrota, L., *et al.* Pharmacological characterization of endothelial cell nitric oxide synthase inhibitors in isolated rabbit aorta. *Life Sci.* **62(6)**, 479-490 (1998).
3. Babál, P., Pechánová, O., and Bernátová, I. Long-term administration of D-NAME induces hemodynamic and structural changes in the cardiovascular system. *Physiol. Res.* **49(1)**, 47-54 (2000).
4. Kawabata, A., Umeda, N., and Takagaki, H. L-arginine exerts a dual role in nociceptive processing in the brain: Involvement of the kyotorphin-Met-enkephalin pathway and NO-cyclic GMP pathway. *Br. J. Pharmacol.* **109(1)**, 73-79 (1993).

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