

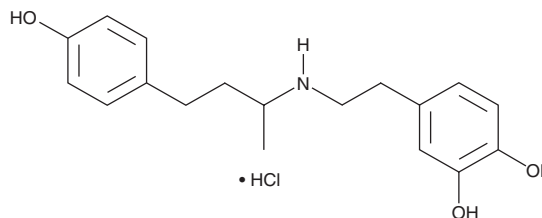
PRODUCT INFORMATION



Dobutamine (hydrochloride)

Item No. 15582

CAS Registry No.: 49745-95-1
Formal Name: 4-[2-[[3-(4-hydroxyphenyl)-1-methylpropyl]amino]ethyl]-1,2-benzenediol, monohydrochloride
Synonyms: Dobutrex, Inotrex, NSC 299583
MF: C₁₈H₂₃NO₃ • HCl
FW: 337.9
Purity: ≥95%
UV/Vis.: λ_{max}: 225, 280 nm
Supplied as: A crystalline powder
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Dobutamine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the dobutamine (hydrochloride) in the solvent of choice. Dobutamine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of dobutamine (hydrochloride) in these solvents is approximately 1, 12, and 20 mg/ml, respectively.

Dobutamine (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, dobutamine (hydrochloride) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Dobutamine (hydrochloride) has a solubility of approximately 0.1 mg/ml in a 1:7 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Dobutamine is a catecholamine that acts as a β -adrenergic receptor agonist with potent positive inotropic effects *in vivo*.¹⁻³ It has its strongest effects on β_1 receptors, with lesser but significant β_2 receptor activation and only weak α_1 receptor actions.^{1,2} As a result, it strongly increases cardiac contractility with modest chronotropic, arrhythmogenic, and vascular side effects.¹ Dobutamine is also a polyphenolic antioxidant and can inhibit all human carbonic anhydrase isoforms with K_i values near 1 μ M.⁴

References

1. Tuttle, R.R. and Mills, J. Dobutamine: Development of a new catecholamine to selectively increase cardiac contractility. *Circ. Res.* **36(1)**, 185-196 (1975).
2. Deighton, N.M., Motomura, A., Bals, S., *et al.* Characterization of the beta adrenoceptor subtype(s) mediating the positive inotropic effects of epinine, dopamine, dobutamine, denopamine and xamoterol in isolated human right atrium. *J. Pharmacol. Exp. Ther.* **262(2)**, 532-538 (1992).
3. Brown, L., Nábauer, M., and Erdmann, E. Dobutamine: Positive inotropy by nonselective adrenoceptor agonism in isolated guinea pig and human myocardium. *Naunyn Schmiedebergs Arch. Pharmacol.* **335(4)**, 385-390 (1987).
4. Innocenti, A., Gülëin, I., Scozzafava, A., *et al.* Carbonic anhydrase inhibitors. Antioxidant polyphenols effectively inhibit mammalian isoforms I-XV. *Bioorg. Med. Chem. Lett.* **20(17)**, 5050-5053 (2010).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/08/2022

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