Dobutamine hydrochloride

Product Number: D 0676
Storage Temperature: 2-8 °C

Product Description
Molecular Formula: C_{18}H_{23}NO_{3} \cdot \text{HCl}
Molecular Weight: 337.8
CAS Number: 49745-95-1
Melting Point: 188-189 °C
PK_{a} = 9.45
Extinction coefficient: E^{\text{mm}} = 4.77 (280 nm, methanol)^{1}
Synonym: Dobutrex

Dobutamine hydrochloride, a dopamine derivative, is a selective β_{1}-adrenergic agonist.^{1} It is a sympathomimetic agent with inotropic action (changes strength of muscle contraction) on the heart. However, it may have some α and β_{2}-agonist properties as well.^{2}

Dobutamine induced relaxation in the rat mesenteric arteries and in the vascular smooth muscle of isolated rabbit aorta.^{3,4} Dobutamine was shown to be at least 10-fold more potent than salbutamol, a β_{2}-adrenergic agonist, for induction of both DNA synthesis and plasma membrane desialylation in mouse parotid glands (intraperitoneal injection, 0.4-40 µg/gram body weight).^{5} After intravenous administration, it is rapidly metabolized by conjugation with glucuronide and 3-O-methylation to inactive metabolites which are excreted in the urine, mostly in the first 2 hours. The half-life in plasma is about two minutes.^{6}

The absorbance, IR and mass spectra have been reported.^{6} An HPLC detection procedure for dobutamine in equine plasma (detection limit of 100 pg/ml) has also been reported.^{7}

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
Dobutamine hydrochloride is sparingly soluble in water (10 mg/ml, with gentle heating) and in ethanol (20 mg/ml, with gentle heating), forming a clear, faint yellow solution in each solvent. It is soluble in methanol and in pyridine.^{6}

Storage/Stability
Solutions are rapidly oxidized at pH 11-13.^{1} It is recommended that solutions be freshly prepared and protected from light. Dobutamine hydrochloride is sensitive to light.

References
1. The Merck Index, 13th Ed., Entry# 3429.


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