
Product Data Sheet

Product Name: (rac)-Dobutamine-d4 hydrochloride

Cat. No.: GC64481

Chemical Properties

Cas. No. 1246815-74-6

Formula C₁₈H₂₀D₄ClNO₃

M.Wt

341.87

Solubility

Storage

Store at -20°C

General tips

For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

Background

(Rac)-Dobutamine-d4 hydrochloride is a labelled racemic Dobutamine hydrochloride. Dobutamine hydrochloride is a synthetic catecholamine that acts on α 1-AR, β 1-AR, β 2-AR (α -1, β -1 and β -2 adrenoceptors). Dobutamine hydrochloride is a selective β 1-AR agonist, relatively weak activity at α 1-AR and β 2-AR. Dobutamine hydrochloride can increase cardiac output and correct hypoperfusion[1][2][3][4].

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother.* 2019;53(2):211-216.

[2]. Tuttle RR, et al. Dobutamine: development of a new catecholamine to selectively increase cardiac contractility. *Circ Res.* 1975 Jan;36(1):185-96.

[3]. Vallet B, et al. Dobutamine: mechanisms of action and use in acute cardiovascular pathology. *Ann Cardiol Angeiol (Paris).* 1991 Jun;40(6):397-402.

[4]. Tyrankiewicz U, et al. Characterization of the cardiac response to a low and high dose of dobutamine in the mouse model of dilated cardiomyopathy by MRI in vivo. *J*

Caution: Product has not been fully validated for medical applications. For research use only.

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Magn Reson Imaging. 2013 Mar;37(3):669-77.

[5]. Tibayan FA, et al. Dobutamine increases alveolar liquid clearance in ventilated rats by beta-2 receptor stimulation. Am J Respir Crit Care Med. 1997 Aug;156(2 Pt 1):438-44.

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