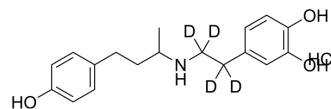


## (rac)-Dobutamine-d<sub>4</sub> hydrochloride

<b>Cat. No.:</b>	HY-15746S
<b>CAS No.:</b>	1246815-74-6
<b>Molecular Formula:</b>	C <sub>18</sub> H <sub>20</sub> D <sub>4</sub> ClNO <sub>3</sub>
<b>Molecular Weight:</b>	341.87
<b>Target:</b>	Adrenergic Receptor; Isotope-Labeled Compounds
<b>Pathway:</b>	GPCR/G Protein; Neuronal Signaling; Others
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	(rac)-Dobutamine-d <sub>4</sub> (hydrochloride) is a labelled racemic Dobutamine hydrochloride. Dobutamine hydrochloride is a synthetic catecholamine that acts on α <sub>1</sub> -AR, β <sub>1</sub> -AR, β <sub>2</sub> -AR (α-1, β-1 and β-2 adrenoceptors). Dobutamine hydrochloride is a selective β <sub>1</sub> -AR agonist, relatively weak activity at α <sub>1</sub> -AR and β <sub>2</sub> -AR. Dobutamine hydrochloride can increase cardiac output and correct hypoperfusion[1][2][3][4].
<b>In Vitro</b>	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 <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### REFERENCES

- [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 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.

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

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