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**Product Data Sheet**

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Product Name: Methacholine bromide

Cat. No.: GC67620

**Chemical Properties**

Cas. No. 333-31-3

Formula  $C_8H_{18}BrNO_2$  M.Wt 240.14

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**

Methacholine (Acetyl- $\beta$ -methylcholine) bromide is a potent **muscarinic-3 (M3)** agonist. Methacholine bromide acts directly on acetylcholine receptors on smooth muscle causing bronchoconstriction and airway narrowing. Methacholine bromide shows a high sensitivity to identify bronchial hyperresponsiveness (BHR). Methacholine bromide can be used to measure airway hyperresponsiveness (AHR) as a diagnostic aid in the assessment of individuals with asthma-like symptoms and normal resting expiratory flow rates<sup>[1][2][3][4]</sup>.

Methacholine bromide (0.5  $\mu$ g/kg plus 5  $\mu$ g/kg/min for 30 min) induces bronchoconstriction in dogs<sup>[4]</sup>.

Methacholine bromide (0.5 mg/kg; i.v.) induces bronchoconstriction was inhibited by bradykinin (4-40  $\mu$ g/kg; i.v.) in a dose-dependent manner in mouse<sup>[5]</sup>.

Animal Model: 9-week female BALB/c mice<sup>[6]</sup>

Dosage: 0.03, 0.1, 0.3, 1 mg/kg

Administration: I.v

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

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Address: 10292 Central Ave. #205, Montclair, CA, USA

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Result: Induced severe  
bronchoconstriction.

- [1]. Cohen J, et al. Relationship between airway responsiveness to neurokinin A and methacholine in asthma. *Pulm Pharmacol Ther.* 2005;18(3):171-176.
- [2]. Anderson SD, et al. Comparison of mannitol and methacholine to predict exercise-induced bronchoconstriction and a clinical diagnosis of asthma. *Respir Res.* 2009;10(1):4. Published 2009 Jan 23.
- [3]. Cockcroft DW. Methacholine challenge methods. *Chest.* 2008;134(4):678-680.
- [4]. Kabara S, et al. Differential effects of thiopental on methacholine- and serotonin-induced bronchoconstriction in dogs. *Br J Anaesth.* 2003 Sep;91(3):379-84.
- [5]. Folkerts G, et al. Bradykinin causes inhibition of methacholine-induced bronchoconstriction in vivo in mice. *Naunyn Schmiedebergs Arch Pharmacol.* 2001 Jul;364(1):53-8.
- [6]. Vitorasso RL, et al. Methacholine dose response curve and acceptability criteria of respiratory mechanics modeling. *Exp Lung Res.* 2020 Feb-Mar;46(1-2):23-31.

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