

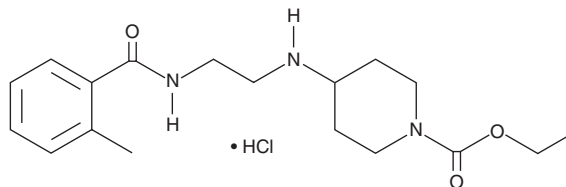
# PRODUCT INFORMATION



## VU0357017 (hydrochloride)

Item No. 11939

**CAS Registry No.:** 1135242-13-5  
**Formal Name:** 4-[[2-[(2-methylbenzoyl)amino]ethyl]amino]-1-piperidinecarboxylic acid, ethyl ester, monohydrochloride  
**Synonym:** CID-25010775  
**MF:** C<sub>18</sub>H<sub>27</sub>N<sub>3</sub>O<sub>3</sub> • HCl  
**FW:** 369.9  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

VU0357017 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the VU0357017 (hydrochloride) in the solvent of choice. VU0357017 (hydrochloride) is soluble in the organic solvent DMSO, at a concentration of approximately 3 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of VU0357017 (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of VU0357017 (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

VU0357017 is an allosteric agonist of M<sub>1</sub> muscarinic acetylcholine receptors (mAChRs; K<sub>i</sub> = 9.91 μM in CHO cells).<sup>1</sup> *In vitro*, it is selective for M<sub>1</sub> over M<sub>2</sub>-M<sub>5</sub> mAChRs (K<sub>i</sub>s = 21.4-50 μM in CHO cells). VU0357017 induces concentration-dependent increases in calcium mobilization and activates the ERK signaling pathway with EC<sub>50</sub> values of 1.6 and 37 μM, respectively, in CHO cells expressing human recombinant M<sub>1</sub> receptors.<sup>2</sup> *In vivo*, VU0357017 crosses the blood-brain barrier and reverses scopolamine-induced deficits in contextual fear conditioning in rats when used at a dose of 10 mg/kg.<sup>3</sup>

### References

1. Digby, G.J., Utle, T.J., Lamsal, A., *et al.* Chemical modification of the M<sub>1</sub> agonist VU0364572 reveals molecular switches in pharmacology and a bitopic binding mode. *ACS Chem. Neurosci.* **3**(12), 1025-1036 (2012).
2. Digby, G.J., Noetzel, M.J., Bubser, M., *et al.* Novel allosteric agonists of M<sub>1</sub> muscarinic acetylcholine receptors induce brain region-specific responses that correspond with behavioral effects in animal models. *J. Neurosci.* **32**(25), 8532-8544 (2012).
3. Lebois, E.P., Bridges, T.M., Lewis, L.M., *et al.* Discovery and characterization of novel subtype-selective allosteric agonists for the investigation of M<sub>1</sub> receptor function in the central nervous system. *ACS Chem Neurosci.* **1**(2), 104-121 (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.

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