



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC Handels GmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

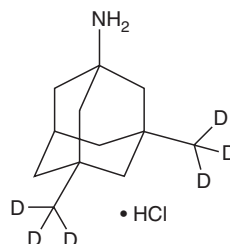
[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# PRODUCT INFORMATION

## Memantine-d<sub>6</sub> (hydrochloride)

Item No. 25463

**CAS Registry No.:** 1189713-18-5  
**Formal Name:** 3,5-di(methyl-d<sub>3</sub>)-tricyclo[3.3.1.1<sup>3,7</sup>]decan-1-amine, monohydrochloride  
**MF:** C<sub>12</sub>H<sub>15</sub>D<sub>6</sub>N • HCl  
**FW:** 221.8  
**Chemical Purity:** ≥98% (Memantine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>6</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A 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

Memantine-d<sub>6</sub> (hydrochloride) is intended for use as an internal standard for the quantification of memantine (Item No. 14184) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Memantine-d<sub>6</sub> (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the memantine-d<sub>6</sub> (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Memantine-d<sub>6</sub> (hydrochloride) is soluble in DMSO and methanol.

### Description

Memantine is an NMDA receptor antagonist that blocks NMDA-induced currents in rat retinal ganglion cells by 90% when used at a concentration of 12 μM.<sup>1</sup> It reverses inhibition of dephosphorylation of the synthetic tau phosphopeptide p17 (tau<sub>194-207</sub>) induced by the endogenous inhibitor of protein phosphatase 2A (PP2A) I<sub>1</sub><sup>PP2A</sup> *in vitro*.<sup>2</sup> *In vivo*, memantine (2 mg/kg) restores PP2A activity, decreases GSK-3β and amyloid-β (Aβ) levels in the hippocampus, cerebral cortex, and ventricular areas, and attenuates spatial learning and memory deficits in the AAV1-I<sub>1</sub><sup>PP2A</sup> rat model of Alzheimer's disease. Memantine (20 mg/kg) reduces responding on the ethanol-associated lever in a cue-induced ethanol-seeking test in rats.<sup>3</sup> It also decreases secretion of matrix metalloproteinase-9 (MMP-9), degradation of collagen IV, the size of cerebral ischemia-induced brain infarcts, and neuronal cell death in a mouse model of focal cerebral ischemia.<sup>4</sup>

### References

- Chen, H.S.V., Pellegrini, J.W., Aggarwal, S.K., *et al.* Open-channel block of N-methyl-D-aspartate (NMDA) responses by memantine: Therapeutic advantage against NMDA receptor-mediated neurotoxicity. *J. Neurosci.* **12**(11), 4427-4436 (1992).
- Wang, X., Blanchard, J., Grundke-Iqbal, I., *et al.* Memantine attenuates Alzheimer's disease-like pathology and cognitive impairment. *PLoS One* **10**(12), e0145441, (2015).
- Vangelione, V., Olevska, A., and Spanagel, R. Long-lasting effect of NMDA receptor antagonist memantine on ethanol-cue association and relapse. *J. Neurochem.* **135**(6), 1080-1085 (2015).
- Chen, Z.-Z., Yang, D.-D., Zhao, Z., *et al.* Memantine mediates neuroprotection via regulating neurovascular unit in a mouse model of focal cerebral ischemia. *Life Sci.* **150**, 8-14 (2016).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/09/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM