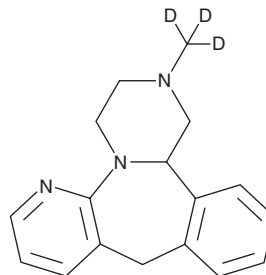


# PRODUCT INFORMATION



## Mirtazapine-d<sub>3</sub> Item No. 40121

<b>CAS Registry No.:</b>	1216678-68-0
<b>Formal Name:</b>	1,2,3,4,10,14b-hexahydro-2-(methyl-d <sub>3</sub> )-pyrazino[2,1-a]pyrido[2,3-c][2]benzazepine
<b>Synonym:</b>	6-Azamianserin-d <sub>3</sub>
<b>MF:</b>	C <sub>17</sub> H <sub>16</sub> D <sub>3</sub> N <sub>3</sub>
<b>FW:</b>	268.4
<b>Chemical Purity:</b>	≥98% (Mirtazapine)
<b>Deuterium Incorporation:</b>	≥99% deuterated forms (d <sub>1</sub> -d <sub>3</sub> ); ≤1% d <sub>0</sub>
<b>Supplied as:</b>	A solid
<b>Storage:</b>	-20°C
<b>Stability:</b>	≥4 years



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

### Laboratory Procedures

Mirtazapine-d<sub>3</sub> is intended for use as an internal standard for the quantification of mirtazapine 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).

Mirtazapine-d<sub>3</sub> is supplied as a solid. A stock solution may be made by dissolving the mirtazapine-d<sub>3</sub> in the solvent of choice, which should be purged with an inert gas. Mirtazapine-d<sub>3</sub> is slightly soluble in chloroform and methanol.

### Description

Mirtazapine is a tetracyclic antidepressant.<sup>1</sup> It selectively binds to the histamine H<sub>1</sub> receptor, α<sub>2A</sub>- and α<sub>2C</sub>-adrenergic receptors, and the serotonin (5-HT) receptor subtypes 5-HT<sub>2A</sub> and 5-HT<sub>2C</sub> (K<sub>i</sub>s = 1.6, 20, 18, 69, and 39 nM, respectively) over the α<sub>1</sub>-adrenergic receptor, 5-HT<sub>7</sub>, norepinephrine transporter (NET), and dopamine D<sub>1</sub>, -D<sub>2</sub>, and -D<sub>3</sub> receptors (K<sub>i</sub>s = 608, 265, 1,640, 4,167, >5,454, and 5,723 nM, respectively). Mirtazapine inhibits tryptamine-induced cyanosis, bilateral convulsions, and backward locomotion in rats (ED<sub>50</sub>s = 0.8, 0.32, and 0.5 mg/kg, respectively). It prevents the acquisition and reinstatement of cocaine-induced place preference in rats.<sup>2</sup> Mirtazapine (40 mg/kg) decreases immobility time in the forced swim test in mice.<sup>3</sup> Formulations containing mirtazapine have been used in the treatment of major depressive disorder. This product is also available as an analytical reference standard (Item Nos. 31762 | 21126).

### References

1. Fernández, J., Alonso, J.M., Andrés, J.I., *et al.* Discovery of new tetracyclic tetrahydrofuran derivatives as potential broad-spectrum psychotropic agents. *J. Med. Chem.* **48**(6), 1709-1712 (2005).
2. Barbosa-Méndez, S., Matus-Ortega, M., Jacinto-Gutiérrez, S., *et al.* Mirtazapine impairs acquisition and reinstatement of cocaine-induced place preference in rats. *Eur. J. Pharmacol.* **820**, 183-190 (2018).
3. Muguruza, C., Rodríguez, F., Rozas, I., *et al.* Antidepressant-like properties of three new α<sub>2</sub>-adrenoceptor antagonists. *Neuropharmacology* **65**, 13-19 (2013).

#### 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

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