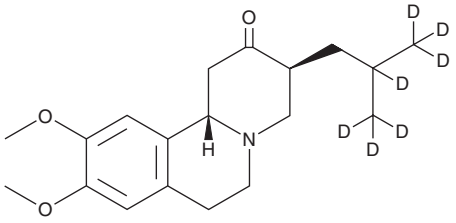
# PRODUCT INFORMATION

## Tetrabenazine-$d_7$

*Item No. 27181*

**CAS Registry No.:** 2701977-99-1
**Formal Name:** *rel*-1,3R,4,6,7,11bR-hexahydro-9,10-dimethoxy-3-(2-(methyl-$d_3$)propyl-2,3,3,3-$d_4$)-2H-benzo[a]quinolizin-2-one
**Synonym:** TBZ-$d_7$
**MF:** $C_{19}H_{20}D_7NO_3$
**FW:** 324.5
**Chemical Purity:** ≥98% (mixture of enantiomers) (Tetrabenazine)
**Deuterium Incorporation:** ≥99% deuterated forms ($d_1$-$d_7$); ≤1% $d_0$
**Supplied as:** A solid
**Storage:** -20°C
**Stability:** ≥2 years




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

### Laboratory Procedures

Tetrabenazine-$d_7$ is intended for use as an internal standard for the quantification of tetrabenazine (Item No. 20380) 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).

Tetrabenazine-$d_7$ is supplied as a solid. A stock solution may be made by dissolving the tetrabenazine-$d_7$ in the solvent of choice, which should be purged with an inert gas. Tetrabenazine-$d_7$ is soluble in chloroform.

### Description

Tetrabenazine is an inhibitor of vesicular monoamine transporter 2 (VMAT2) that is selective over VMAT1 ($K_i$s = 97 and >20,000 nM, respectively, in a serotonin uptake assay).[1] It dose-dependently reduces levels of the monoamines norepinephrine (Item No. 16673), dopamine (Item No. 21992), and serotonin (5-HT; Item No. 14332) in rat brain and has been used to induce depressive-like behavior in animal models.[2,3] Tetrabenazine (5 mg/kg) improves performance in balance beam and rotarod tests and prevents decreases in the number of striatal medium spiny neurons (MSNs) in a YAC128 transgenic mouse model of Huntington's disease.[4] Formulations containing tetrabenazine have been used in the treatment of chorea associated with Huntington's disease.

### References


1. Erickson, J.D., Schäfer, M.K.H., Bonner, T.I., *et al.* Distinct pharmacological properties and distribution in neurons and endocrine cells of two isoforms of the human vesicular monoamine transporter. *Proc. Natl. Acad. Sci. USA* **93(10)**, 5166-5171 (1996).
2. Pettibone, D.J., Totaro, J.A., and Pflueger, A.B. Tetrabenazine-induced depletion of brain monoamines: Characterization and interaction with selected antidepressants. *Eur. J. Pharmacol.* **102(3-4),** 425-430 (1984).
3. Preskorn, S.H., Kent, T.A., Glotzbach, R.K., *et al.* Cerebromicrocirculatory defects in animal model of depression. *Psychoparmacology (Berl).* **84(2),** 196-199 (1984).
4. Wang, H., Chen, X., Li, Y., *et al.* Tetrabenazine is neuroprotective in Huntington's disease mice. *Mol. Neurodegener.* **5**:**18** (2010).





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