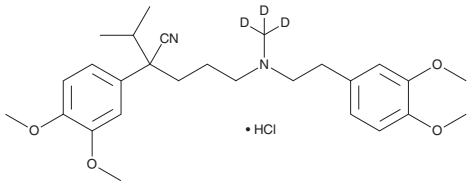
PRODUCT INFORMATION

(±)-Verapamil-d_3 (hydrochloride)

Item No. 18452

CAS Registry No.: 2714485-49-9
Formal Name: α-[3-[[2-(3,4-dimethoxyphenyl)ethyl] methyl-d3-amino]propyl]-3,4-dimethoxy-α-(1-methylethyl)-benzeneacetonitrile
MF: $C_{27}H_{35}D_3N_2O_4 \bullet HCl$
FW: 494.1
Chemical Purity: ≥98% (Verapamil)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_3); ≤1% d_0
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

(±)-Verapamil-d_3 (hydrochloride) is intended for use as an internal standard for the quantification of verapamil (Item No. 14288) 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).

(±)-Verapamil-d_3 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-verapamil-d_3 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. (±)-Verapamil-d_3 (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (±)-verapamil-d_3 (hydrochloride) in ethanol and DMSO is approximately 10 mg/ml and approximately 15 mg/ml in DMF.

Description

Verapamil is the prototypical blocker of L-type calcium channels that produces excitation-contraction uncoupling in cardiac muscle by preventing the slow-inward current of calcium ions.[1] Verapamil can also block calcium fluxes in vascular smooth muscle. It has both peripheral and coronary vasodilator effects (IC_{50} = 0.38 µM in guinea pig aortic strip) and has been used to control hypertension, angina, cardiac arrhythmia, and vascular headaches.[2-4] Verapamil has also been used in cell biology as an inhibitor of drug efflux pump proteins such as P-glycoprotein, which are often over-expressed in certain tumor cell lines.[5]

References

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2. Dei, S., Romanelli, M.N., Scapecchi, S., *et al. J. Med. Chem.* **36**, 439-445 (1993).
3. Dawson, J.R., Whitaker, N.H.G., and Sutton, G.C. *Br. Heart J.* **46**, 508-512 (2013).
4. Campbell, T.J. and Williams, K.M. *Br. J. Clin. Pharmacol.* **46**, 307-319 (1998).
5. Rabindran, S.K., He, H., Singh, M., *et al. C. Cancer Res.* **58**, 5850-5858 (1998).

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