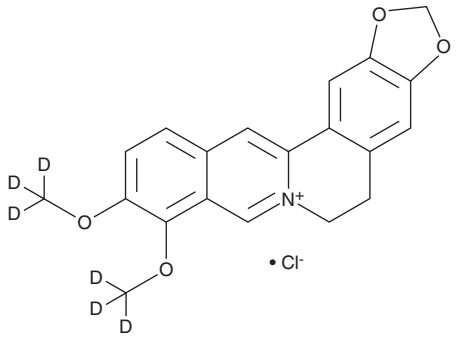
PRODUCT INFORMATION

Berberine-d_6 (chloride)

Item No. 34851

Formal Name:	5,6-dihydro-9,10-dimethoxy-d_6-benzo[g]-1,3-benzodioxolo[5,6-a] quinolizinium, monochloride
Synonyms:	BBR-d_6, Umbellatine-d_6
MF:	$C_{20}H_{12}D_6NO_4 \bullet Cl$
FW:	377.9
Chemical Purity:	≥95% (Berberine)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_6); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

Berberine-d_6 (chloride) is intended for use as an internal standard for the quantification of berberine (Item No. 10006427) 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).

Berberine-d_6 (chloride) is supplied as a solid. A stock solution may be made by dissolving the berberine-d_6 (chloride) in the solvent of choice, which should be purged with an inert gas. Berberine-d_6 (chloride) is slightly soluble in DMSO and methanol.

Description

Berberine is an isoquinoline alkaloid that has been found in *C. fenestratum* and has diverse biological activities.[1-5] It induces frameshift mutations and gene crossovers in haploid and diploid strains of *S. cerevisiae*, respectively, in the exponential growth phase when used at a concentration of 50 µg/ml.[2] Berberine is active against the *S. aureus* strains ATCC 25922 and NCTC 8530 (MIC = 250 µg/ml for both).[3] It decreases contusion volume, ventricle enlargement, and neurological deficits in a mouse model of controlled cortical impact-induced traumatic brain injury (TBI) when administered at a dose of 10 mg/kg.[4] Berberine (50 mg/kg) reduces serum LDL cholesterol levels in hamsters fed a high-fat high-cholesterol diet.[5]

References

1. Malhotra, S., Taneja, S.C., and Dhar, K.L. Minor alkaloid from *Coscinium fenestratum*. *Phytochem.* **28(7)**, 1998-1999 (1989).
2. Pasqual, M.S., Lauer, C.P., Moyna, P., *et al.* Genotoxicity of the isoquinoline alkaloid berberine in prokaryotic and eukaryotic organisms. *Mutat. Res.* **286(2)**, 243-252 (1993).
3. Iwasa, K., Kamigauchi, M., Ueki, M., *et al.* Antibacterial activity and structure-activity relationships of berberine analogs. *Eur. J. Med. Chem.* **31(6)**, 469-478 (1996).
4. Chen, C.C., Hung, T.H., Lee, C.Y., *et al.* Berberine protects against neuronal damage via suppression of glia-mediated inflammation in traumatic brain injury. *PLoS One* **9(12)**, e115694 (2014).
5. Kong, W., Wei, J., Abidi, P., *et al.* Berberine is a novel cholesterol-lowering drug working through a unique mechanism distinct from statins. *Nat. Med.* **10(12)**, 1344-1351 (2004).

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