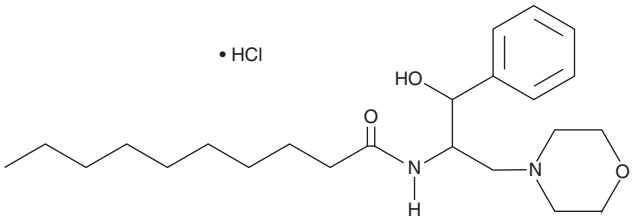
PRODUCT INFORMATION

PDMP (hydrochloride)

Item No. 62595

CAS Registry No.: 73257-80-4
Formal Name: N-[2-hydroxy-1-(4-morpholinylmethyl)-2-phenylethyl]-decanamide, monohydrochloride
Synonym: DL-*erythro/threo*-PDMP
MF: $C_{23}H_{38}N_2O_3 \bullet HCl$
FW: 427.0
Purity: ≥98%
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

PDMP (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the PDMP (hydrochloride) in the solvent of choice. PDMP (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of PDMP (hydrochloride) in these solvents is approximately 50, 30, and 25 mg/ml, respectively.

PDMP (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, PDMP (hydrochloride) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. PDMP (hydrochloride) has a solubility of approximately 0.05 mg/ml in a 1:5 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

PDMP is a ceramide analog first prepared in a search for inhibitors of glucosylceramide synthase.[1] PDMP has two adjacent chiral centers (C1 and C2) allowing for the formation of four possible isomers. PDMP contains all four of these stereoisomers. PDMP inhibits glucosylceramide synthase by 90% when used at a concentration of 0.8 µM in MDCK cell homogenates, however, the ability to inhibit glucosylceramide synthase has been found to reside in the D-*threo* (1R,2R) enantiomer.[2] The D-*threo* PDMP enantiomer is also responsible for inhibition of β-1,4-galactosyltransferase 6 and prevention of lactosylceramide synthesis, which is a promotor of neuroinflammation in mice during chronic experimental autoimmune encephalomyelitis (EAE), a model of multiple sclerosis.[3] PDMP enhances curcumin-induced inhibition of proliferation, JNK activation, and Akt inhibition, as well as induction of apoptosis in WM-115 melanoma cells *in vitro*.[4]

References

1. Vunnam, R.R. and Radin, N.S. Analogs of ceramide that inhibit glucocerebroside synthetase in mouse brain. *Chem. Phys. Lipids* **26(3)**, 265-278 (1980).
2. Abe, A., Radin, N.S., Shayman, J.A., *et al.* Structural and stereochemical studies of potent inhibitors of glucosylceramide synthase and tumor cell growth. *J. Lipid Res.* **36(3)**, 611-621 (1995).
3. Mayo, L., Trauger, S.A., Blain, M., *et al.* Regulation of astrocyte activation by glycolipids drives chronic CNS inflammation. *Nat. Med.* **20(10)**, 1147-1156 (2014).
4. Yu, T., Li, J., Qiu, Y., *et al.* 1-phenyl-2-decanoylamino-3-morpholino-1-propanol (PDMP) facilitates curcumin-induced melanoma cell apoptosis by enhancing ceramide accumulation, JNK activation, and inhibiting PI3K/AKT activation. *Mol. Cell. Biochem.* **361(1-2)**, 47-54 (2012).

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