

PRODUCT DATA SHEET

D,L-erythro-PDMP

Catalog number: 1755

Common Name: D,L-erythro-1-Phenyl-2-decanoylamino-3-morpholino-1-propanol • HCl

Source: synthetic

Solubility: ethanol, methanol, chloroform, DMSO

CAS number: 73257-80-4

Molecular Formula: C₂₃H₃₈N₂O₃ • HCl

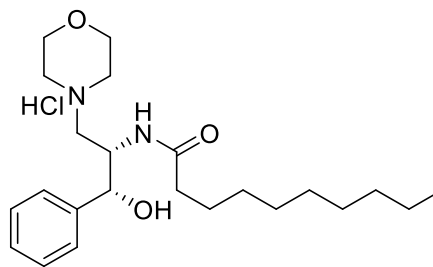
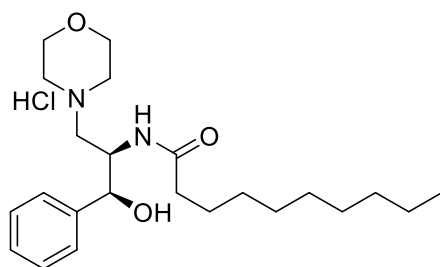
Molecular Weight: 427

Storage: -20°C

Purity: TLC >98%; HPLC >98%; identity confirmed by MS

TLC System: chloroform/methanol/DI water (65:25:4 by vol.)

Appearance: solid



Application Notes:

This product inhibits the growth of cells, including cancer cells. *D-threo*-PDMP has been shown to inhibit cell growth by inhibiting the enzyme glucosylceramide synthase¹ but *erythro*-PDMP inhibits growth according to a different mechanism. PDMP has four possible isomers (*D-threo*, *L-threo*, *D-erythro*, and *L-erythro*) due to its two chiral centers. This product (*D,L-erythro*-PDMP) is a mixture of *D-erythro* (1R,2R) and *L-erythro* (1S,2S). The *D-threo* isomer has been shown to be the active glucosyl ceramide synthetase inhibitor.² Although *erythro*-PDMP does not inhibit glucosylceramide synthase it does cause cell growth inhibition similar to *threo*-PDMP.³ This has been suggested as a treatment for cancer.⁴ In addition to its stereochemistry, the acyl chain of PDMP has a very marked effect on the intensity of the inhibitory action of the molecule.

Selected References:

1. R. Vunnam, N. Radin "Analogues of ceramide that inhibit glucocerebrosidase in mouse brain" *Chem Phys Lipids*, Vol. 26(3) pp. 265-278, 1980
2. N. Radin et al. "Effects of *D-threo*-PDMP, an inhibitor of glucosylceramide synthetase, on expression of cell surface glycolipid antigen and binding to adhesive proteins by B16 melanoma cells" *Journal of Cellular Physiology*, Vol. 141(3) pp. 573-583, 1989
3. N. Radin et al. "Effect of an inhibitor of glucosylceramide synthesis on cultured rabbit skin fibroblasts" *Journal of Biochemistry*, vol. 108:4 pp. 525-530, 1990
4. N. Radin, et al. "Structural and stereochemical studies of potent inhibitors of glucosylceramide synthase and tumor cell growth" *Journal of Lipid Research*, Vol. 36 pp. 611-621, 1995

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