

# PRODUCT DATA SHEET

## D-threo-PDMP

**Catalog No:** 1756

**Common Name:** D-threo-1-Phenyl-2-decanoylamino-3-morpholino-1-propanol • HCl

**Source:** synthetic

**Solubility:** ethanol, methanol

**CAS No:** 139889-62-6

**Molecular Formula:** C<sub>23</sub>H<sub>38</sub>N<sub>2</sub>O<sub>3</sub> • HCl

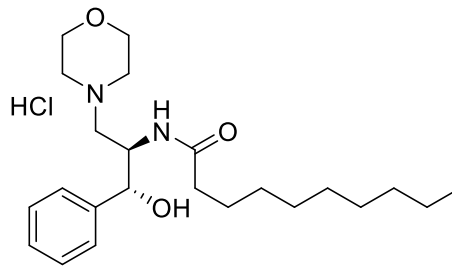
**Molecular Weight:** 427

**Storage:** -20°C

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

**TLC System:** chloroform/methanol/acetic acid  
(90:10:10 by vol.)

**Appearance:** solid



### Application Notes:

This product is a glucosylceramide synthase inhibitor, an enzyme that is essential for the synthesis of a very large number of different glycolipids that are found in many organisms.<sup>1</sup> PDMP has four possible isomers due to its two chiral centers (D-threo, L-threo, D-erythro, and L-erythro). The D-threo isomer has been shown to be the active glucosylceramide synthase inhibitor.<sup>2</sup> Due to PDMP's ability to inhibit the joining of ceramides with carbohydrates there can be an accumulation of ceramide in the cells and this can lead to apoptosis. This process has been suggested as a treatment for cancer.<sup>3</sup> 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., "Structural and stereochemical studies of potent inhibitors of glucosylceramide synthase and tumor cell growth" *Journal of Lipid Research*, Vol. 36 pp. 611-621, 1995

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.

DS1756 Rev. #8  
December 22<sup>nd</sup>, 2021