

# PRODUCT DATA SHEET

## 1,2-Dimyristoyl-sn-glycero-3-phosphorylglycerol (Na<sup>+</sup> salt)

**Catalog number:** 1431

**Common Name:** DMPG

**Source:** synthetic

**Solubility:** chlorform/methanol (5:1)

**CAS number:** 200880-40-6

**Molecular Formula:** C<sub>34</sub>H<sub>66</sub>O<sub>10</sub>P·Na

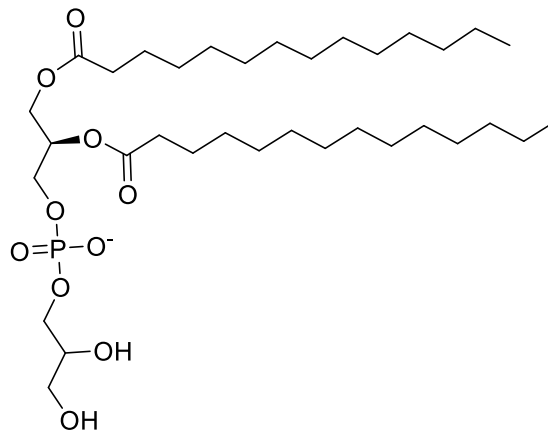
**Molecular Weight:** 689

**Storage:** -20°C

**Purity:** TLC >98%

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

**Appearance:** solid



### Application Notes:

Phosphatidylglycerols are found in pulmonary surfactant, the lipoprotein complex that is formed by type II alveolar cells in the lung. They are important in spreading secreted surfactant over the type I alveolar cells. 1,2-dimyristoyl-sn-glycero-3-phosphorylglycerol causes conformational structural changes to a human growth hormone-releasing factor fragment.<sup>1</sup> The enzyme cardiolipin synthase attaches two phosphatidylglycerols together to form cardiolipin which is a major component of the mitochondrial inner membrane.<sup>2</sup> Phosphatidylglycerol is the main component of some bacterial membranes where it contains diacyl, alkylacyl, or alkenylacyl groups. Phosphatidylglycerols generally have saturated and monoenoic fatty acids on position *sn*-2 and polyunsaturated fatty acids in position *sn*-1. This is the opposite of the other animal phospholipids and is due to its being synthesized by a different mechanism. Phosphatidylglycerol has been found to be essential for the development of thylakoid membranes in some plants.<sup>3</sup> Besides being critical in membranes Phosphatidylglycerol is essential for the oligomerization of photosystems I and II in cyanobacteria, for the sensitivity to chilling in plants, and for cellular fission and division in bacteria.

### Selected References:

1. S. Honda et al "Solution structure of human growth hormone-releasing factor fragment (1-29) by CD: characteristic conformational change on phospholipid membrane" *Biopolymers.*, Vol. 31(7) pp. 869-76, 1991
2. S. Vaena de Avalos et al. "The phosphatidylglycerol/cardiolipin biosynthetic pathway is required for the activation of inositol phosphosphingolipid phospholipase C, Isc1p, during growth of *Saccharomyces cerevisiae*" *Journal of Biological Chemistry*, Vol. 280(8) pp. 7170-7177, 2004
3. M. Hagio et al. "Phosphatidylglycerol is Essential for the Development of Thylakoid Membranes in *Arabidopsis thaliana*" *Plant & Cell Physiology*, Vol. 43(12), pp. 1456-1464, 2002

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