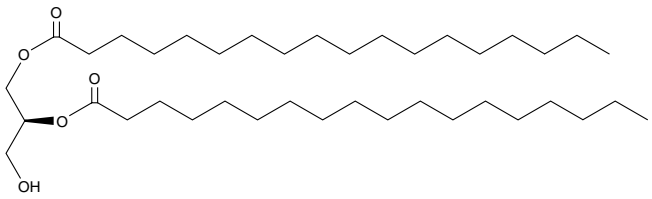
Product Information

1,2-Distearoyl-*sn*-glycerol

Item No. 15079

CAS Registry No.: 10567-21-2
Formal Name: 1,2-distearoyl-*sn*-glycerol
Synonyms: 1,2-Dioctadecanoyl-*sn*-glycerol, DSG
MF: $C_{39}H_{76}O_5$
FW: 625.0
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that 1,2-distearoyl-*sn*-glycerol (DSG) be stored as supplied at -20°C. It should be stable for at least two years.

DSG is supplied as a crystalline solid. A stock solution may be made by dissolving the DSG in the solvent of choice. DSG is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of DSG in these solvents is approximately 0.25, 30, and 20 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of DSG can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DSG in PBS, pH 7.2, is approximately 0.7 mg/ml. We do not recommend storing the aqueous solution for more than one day.

1,2-Diacylglycerols (DAGs) are formed in cells through the hydrolysis of phospatidyliositol 4,5-bisphosphate by phospholipase C. They have important roles in signal transduction, as in their activation of some isoforms of PKC.[1] In addition, DAGs are modified by DAG kinases, reducing signaling through DAG while generating bioactive phosphatidic acids.[2,3] DSG is a form of DAG containing the saturated long-chain (18:0) stearic acid at both the *sn*-1 and the *sn*-2 position.

References

1. Nakamura, S. and Nishizuka, Y. Lipid mediators and protein kinase C activation for the intracellular signaling network. *J. Biochem.* **115(6)**, 1029-1034 (1994).
2. Topham, M.K. and Prescott, S.M. Mammalian diacylglycerol kinases, a family of lipid kinases with signaling functions. *J. Biol. Chem.* **274**, 11447-11450 (1999).
3. Joshi, R.P. and Koretzky, G.A. Diacylglycerol kinases: Regulated controllers of T cell activation, function, and development. *Int. J. Mol. Sci.* **14(4)**, 6649-6673 (2013).

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