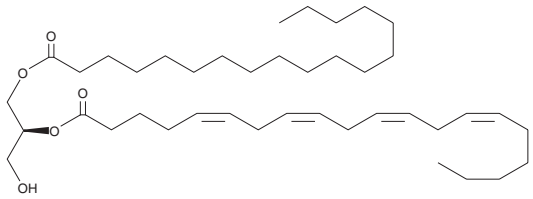
Product Information

1-Stearoyl-2-Arachidonoyl-*sn*-Glycerol

Item No. 10008650

CAS Registry No.: 65914-84-3
Formal Name: 1-octadecanoyl-2-(5Z,8Z,11Z,14Z)-eicosatetraenoyl-*sn*-glycerol
Synonyms: SAG
MF: $C_{41}H_{72}O_5$
FW: 645.0
Purity: ≥95%
Stability: ≥1 year at -80°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that 1-stearoyl-2-arachidonoyl-*sn*-glycerol (SAG) be stored as supplied at -80°C. It should be stable for at least one year.

SAG is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the SAG under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of SAG in these solvents is approximately 10, 0.3, and 0.2 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. If an organic solvent-free solution of SAG is needed, it can be prepared by evaporating the SAG and directly dissolving the neat oil in aqueous buffers. The solubility of SAG in PBS, pH 7.2, is approximately 0.1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Protein Kinase C (PKC) isoforms require activation *via* second messengers including Ca^{2+}, diacylglycerol (DAG), and/or a phospholipid to phosphorylate target proteins and they initiate a variety of important signalling cascades.[1] SAG is a DAG that contains the ω-6 polyunsaturated fatty acid arachidonic acid in the *sn*-2 position and steric acid in the *sn*-1 position of the glycerol backbone. It can potently activate PKCα, PKCε, and PKCδ at nM concentrations.[2] Independent of PKC signalling, SAG competitively binds to the Ras activator RasGRP with a K_i value of 4.49 µM in Jurkat T-cells.[3]

References

1. Bell, R.M. and Burns, D.J. Lipid activation of protein kinase C. *J. Biol. Chem.* **266**, 4661-4664 (1991).
2. Madani, S., Hichami, A., Charkaoui-Malki, M., *et al.* Diacylglycerols containing ω-3 and ω-6 fatty acids bind to RasGRP and modulate MAP kinase activation. *J. Biol. Chem.* **279(2),** 1176-1183 (2004).
3. Madani, S., Hichami, A., Legrand, A., *et al.* Implication of acyl chain diacylglycerols in activation of different isoforms of protein kinase C. *FASEB J.* **15**, 2595-2601 (2001).

Related Products

1,2-Didecanoyl-*sn*-glycerol - Item No. 62210 • 1,2-Dioctanoyl-*sn*-glycerol - Item No. 62225 • 1,2-Dioleoyl-*sn*-glycerol - Item No. 62230 • 1-Oleoyl-2-acetyl-*sn*-glycerol - Item No. 62600 • 1-Stearoyl-2-Arachidonoyl PC - Item No. 10009864

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