

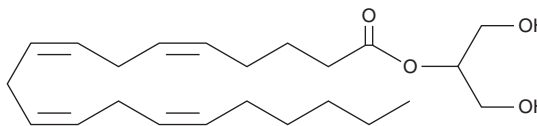
PRODUCT INFORMATION



2-Arachidonoyl Glycerol

Item No. 62160

CAS Registry No.: 53847-30-6
Formal Name: 5Z,8Z,11Z,14Z-eicosatetraenoic acid, 2-glyceryl ester
Synonym: 2-AG
MF: C₂₃H₃₈O₄
FW: 378.6
Purity: ≥95% (as a 9:1 mixture of the 2-AG and 1-AG)
Supplied as: A solution in acetonitrile
Storage: -80°C
Stability: ≥1 year
Special Conditions: Light sensitive



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2-Arachidonoyl glycerol is supplied as a solution in acetonitrile. To change the solvent, simply evaporate the 2-arachidonoyl glycerol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and ethanol purged with an inert gas can be used. The solubility of 2-arachidonoyl glycerol in these solvents is approximately 10 mg/ml and miscible, 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 2-arachidonoyl glycerol is needed, it can be prepared by evaporating the 2-arachidonoyl glycerol and directly dissolving the neat oil in aqueous buffers. The solubility of 2-arachidonoyl glycerol in PBS, pH 7.2, is approximately ~150 µg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

2-Arachidonoyl glycerol (2-AG) is an endogenous agonist of the cannabinoid (CB) receptors CB₁ and CB₂ (K_s = 25.3-472 and 145-1,400 nM, respectively).¹⁻³ Unlike arachidonoyl ethanolamide (AEA; Item No. 90050), 2-AG is present at relatively high levels in the central nervous system and is the most abundant molecular species of monoacylglycerol (MAG) found in rat brain.^{1,4} Formation of 2-AG is calcium-dependent and is mediated by the activities of phospholipase C (PLC) and diacylglycerol (DAG) lipase.¹ 2-AG acts as a full agonist at the CB₁ receptor. At a concentration of 0.3 nM, 2-AG induces a rapid, transient increase in intracellular free calcium in NG108-15 neuroblastoma X glioma cells through a CB₁ receptor-dependent mechanism.² 2-AG is metabolized *in vitro* by MAG lipase and fatty acid amide hydrolase (FAAH), with MAG lipase likely being the principle metabolizing enzyme *in vivo*.⁵

References

1. Stella, N., Schweitzer, P., and Piomelli, D. *Nature* **388**, 773-778 (1997).
2. Sugiura, T., Kodaka, T., Nakane, S., et al. *The Journal of Biological Chemistry* **274**, 2794-2801 (1999).
3. Pertwee, R.G. *Curr. Med. Chem.* **6(8)**, 635-664 (1999).
4. Kondo, S., Kondo, H., Nakane, S., et al. *FEBS Letters* **429**, 152-156 (1998).
5. Dinh, T.P., Carpenter, D., Leslie, F.M., et al. *Proceedings of the National Academy of Sciences of the United States of America* **99(16)**, 10819-10824 (2002).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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