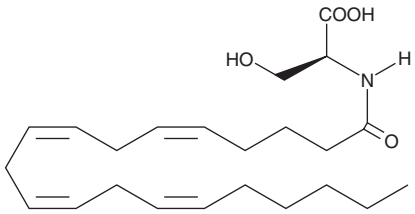
Product Information

N-Arachidonoyl-L-Serine

Catalog No. 10005455

CAS Registry No.: 187224-29-9
Formal Name: N-[1-oxo-5Z,8Z,11Z,14Z-eicosatetraenyl]-L-serine
Synonym: ARA-S
MF: $C_{23}H_{37}NO_4$
FW: 391.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that N-arachidonoyl-L-serine (ARA-S) be stored as supplied at -20°C. It should be stable for at least one year.

ARA-S is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of ARA-S in these solvents is at least 20 mg/ml.

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 ARA-S is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of ARA-S in PBS (pH 7.2) is at least 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Arachidonoyl amides of both amino acids and neurotransmitters such as dopamine have been previously reported in the literature.[1] ARA-S is one such recently isolated endocannabinoid with an unusual activity profile. ARA-S does not bind to central cannabinoid (CB_1) and peripheral cannabinoid (CB_2) receptors or vanilloid receptor 1 (VR_1). Like cannabidiol, ARA-S (5 mg/kg) antagonizes the hypotensive effects of a 10 mg/kg IV bolus of abnormal cannabidiol (Abn-CBD) in an anesthetized rat blood pressure model.[2] However, similar to Abn-CBD, ARA-S relaxes isolated rat mesenteric arteries and abdominal aorta as well as increases phosphorylation of Akt and mitogen-activated protein kinase (MAPK) in HUVEC.[3] The precise mechanisms of action by ARA-S and Abn-DBD in various vascular preparations appears to be different and requires further investigation.

References

1. Bisogno, T., Melck, D., Bobrov, M.Y., *et al.* N-acyl-dopamines: Novel synthetic CB_1 cannabinoid-receptor ligands and inhibitors of anandamide inactivation with cannabimimetic activity *in vitro* and *in vivo*. *Biochem. J.* **351**, 817-824 (2001).
2. Milman, G., Maor, Y., Horowitz, M., *et al.* Arachidonoyl-serine, an endocannabinoid-like bioactive constituent of rat brain. *14th Annual Symposium on the Cannabinoids* 133 (2004).
3. Milman, G., Maor, Y., Abu-Lafi, S., *et al.* N-arachidonoyl L-serine, an endocannabinoid-like brain constituent with vasodilatory properties. *Proc. Natl. Acad. Sci. USA* **103(7)**, 2428-2433 (2006).

Related Products

N-Arachidonoyl-3-hydroxy-γ-Aminobutyric Acid - Cat. No. 10158 • Arachidonoyl Ethanolamide - Cat. No. 90050 • Arachidonoyl Glycine - Cat. No. 90051 • Arachidonoyl Dopamine - Cat. No. 90057 • N-Arachidonoyl-L-Alanine - Cat. No. 90065 • N-Arachidonoyl-γ-Aminobutyric Acid - Cat. No. 90067 • N-Oleoylglycine - Cat. No. 90269

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