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Item No. 10007428

Formal Name: N-[1-oxo-5Z,8Z,11Z,14Z-eicosatetraenyl]-L-serine-5,6,8,9,11,12,14,15-d₈

Synonym: ARA-S-d₈

MF: $\text{C}_{23}\text{H}_{29}\text{D}_8\text{NO}_4$

FW: 399.6

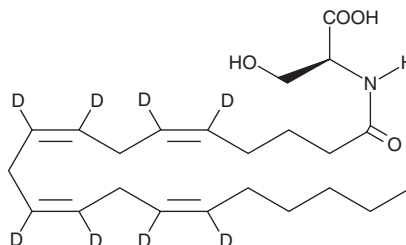
Chemical Purity: ≥98% N-Arachidonoyl-L-Serine

Deuterium

Incorporation: $\geq 99\%$ deuterated forms (d_1 - d_8); $\leq 1\%$ d_0

Stability: ≥ 1 year at -20°C

Supplied as: A solution in ethanol



Laboratory Procedures

N-Arachidonoyl-L-serine-d₈ (ARA-S-d₈) contains eight deuterium atoms at the 5, 6, 8, 9, 11, 12, 14, and 15 positions. It is intended for use as an internal standard for the quantification of ARA-S (Item No. 10005455) by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that ARA-S-d₈ be stored as supplied at -20°C. It should be stable for at least one year.

ARA-S-d₈ 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 ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of ARA-S-d₈ in ethanol is approximately 30 mg/ml and approximately 20 mg/ml in DMSO and DMF.

ARA-S-d₈ is used as an internal standard for the quantification of ARA-S by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Description

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 CB₁ and CB₂ receptors or vanilloid receptor 1. Like cannabidiol (Item No. 90080), ARA-S (5 mg/kg) antagonizes the hypotensive effects of a 10 mg/kg IV bolus of abnormal cannabidiol (Abn-CBD, CAY10429 Item No. 10004259) 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 MAPK in HUVEC.³ The precise mechanisms of action by ARA-S and Abn-CBD 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 CB₁ 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).

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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