PRODUCT INFORMATION



9-Nitrooleate-d₁₇

Item No. 10557

CAS Registry No.:	2714117-50-5	
Formal Name:	9-nitro-9E-octadecenoic-	
	11,11,12,12,13,13,14,14,15,15,	
	16,16,17,17,18,18,18-d ₁₇ acid	
Synonyms:	9-Nitrooleic Acid-d ₁₇ ,	NO ₂
	9-nitro-9-trans-Octadecenoic Acid-d ₁₇	COOH
MF:	$C_{18}H_{16}D_{17}NO_4$	
FW:	344.6	
Chemical Purity:	≥98% (9-Nitrooleate)	
Deuterium		
Incorporation:	\geq 99% deuterated forms (d ₁ -d ₁₇); \leq 1% d ₀	
UV/Vis.:	λ_{max} : 257 nm	
Supplied as:	A solution in ethanol	
Storage:	-20°C	
Stability:	≥2 years	

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

Laboratory Procedures

9-Nitrooleate-d₁₇ is intended for use as an internal standard for the quantification of 9-nitrooleate (Item No. 10012554) by GC- or LC-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

Nitrated unsaturated fatty acids, such as 10- and 12-nitrolinoleate (LNO₂; Item No. 10037), cholesteryl nitrolinoleate, and nitrohydroxylinoleate, represent a new class of endogenous lipid-derived signalling molecules. LNO₂ isomers serve as potent endogenous ligands for PPARy and can also decompose or be metabolized to release nitric oxide.¹⁻⁴ 9-Nitrooleate is one of two regioisomers of nitrooleate, the other being 10-nitrooleate (Item No. 10008043) (OA-NO₂; used for the mixture of isomers), which are formed by nitration of oleic acid (Item No. 90260) in approximately equal proportions in vivo.⁵ Peroxynitrite, acidified nitrite, and myeloperoxidase in the presence of H_2O_2 and nitrite, all mediate the nitration of oleic acid. OA-NO2 is found in human plasma as the free acid and esterified in phospholipids at concentrations of 619 \pm 52 nM and 302 \pm 369 nM, respectively. OA-NO₂ activates PPAR_Y approximately 7-fold at a concentration of 1 μ M and effectively promotes differentiation 3T3-L1 preadipocytes to adipocytes at 3 μM.⁵

References

- 1. Lim, D.G., Sweeney, S., Bloodsworth, A., et al. Proc. Natl. Acad. Sci. USA 99(25), 15941-15946 (2002).
- 2. Schopfer, F.J., Lin, Y., Baker, P.R.S., et al. Proc. Natl. Acad. Sci. USA 102(7), 2340-2345 (2005).
- 3. Lima, E.S., Bonini, M.G., Augusto, O., et al. Free Radic. Biol. Med. 39(4), 532-539 (2005).
- 4. Baker, P.R.S., Schopfer, F.J., Sweeney, S., et al. Proc. Natl. Acad. Sci. USA 101(32), 11577-11582 (2004).
- 5. Baker, P.R., Lin, Y., Schopfer, F.J., et al. J. Biol. Chem. 280(51), 42464-42475 (2005).

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.

WARRANTY AND LIMITATION OF REMEDY

uyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 02/27/2024

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD ANN ARBOR, MI 48108 · USA PHONE: [800] 364-9897 [734] 971-3335 FAX: [734] 971-3640 CUSTSERV@CAYMANCHEM.COM WWW.CAYMANCHEM.COM