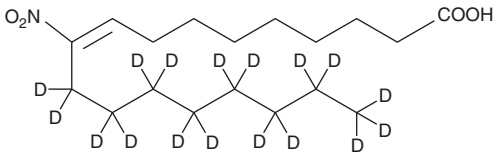
PRODUCT INFORMATION

10-Nitrooleate-d_{17}

Item No. 10558

CAS Registry No.: 2749984-40-3
Formal Name: 10-nitro-9E-octadecenoic-11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-d_{17} acid
Synonyms: 10-Nitrooleic Acid-d_{17}, 10-nitro-9-*trans*-Octadecenoic Acid-d_{17}
MF: $C_{18}H_{16}D_{17}NO_4$
FW: 344.6
Chemical Purity: ≥98% (10-Nitrooleate)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_{17}); ≤1% d_0
UV/Vis.: λ_{max}: 256 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

10-Nitrooleate-d_{17} is intended for use as an internal standard for the quantification of 10-nitrooleate (Item No. 10008043) 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 (LNO_2; Item No. 10037), cholesteryl nitrolinoleate, and nitrohydroxylinoleate, represent a new class of endogenous lipid-derived signalling molecules. LNO_2 isomers serve as potent endogenous ligands for PPARγ and can also decompose or be metabolized to release nitric oxide.[1-4] 10-Nitrooleate is one of two regioisomers of nitrooleate, the other being 9-nitrooleate (Item No. 10008042) (OA-NO_2; 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-NO_2 is found in human plasma as the free acid and esterified in phospholipids at concentrations of 619 ± 52 nM and 302 ± 369 nM, respectively. OA-NO_2 activates PPARγ approximately 7-fold at a concentration of 1 µM 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).

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