

# PRODUCT INFORMATION



## 10-Nitrooleate-d<sub>17</sub>

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<sub>17</sub> acid

Synonyms: 10-Nitrooleic Acid-d<sub>17</sub>,

10-nitro-9-trans-Octadecenoic Acid-d<sub>17</sub>

MF: C<sub>18</sub>H<sub>16</sub>D<sub>17</sub>NO<sub>4</sub>

FW: 344.6

Chemical Purity: ≥98% (10-Nitrooleate)

Deuterium

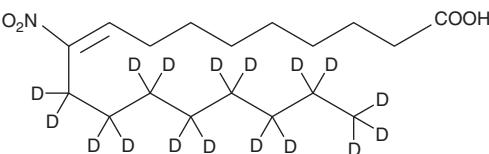
Incorporation: ≥99% deuterated forms (d<sub>1</sub>-d<sub>17</sub>); ≤1% d<sub>0</sub>

UV/Vis.: λ<sub>max</sub>: 256 nm

Supplied as: A solution in ethanol

Storage: -20°C

Stability: ≥1 year



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

## Laboratory Procedures

10-Nitrooleate-d<sub>17</sub> 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<sub>2</sub>; Item No. 10037), cholestrylinoleate, and nitrohydroxylinoleate, represent a new class of endogenous lipid-derived signalling molecules. LNO<sub>2</sub> isomers serve as potent endogenous ligands for PPAR $\gamma$  and can also decompose or be metabolized to release nitric oxide.<sup>1-4</sup> 10-Nitrooleate is one of two regioisomers of nitrooleate, the other being 9-nitrooleate (Item No. 10008042) (OA-NO<sub>2</sub>; used for the mixture of isomers), which are formed by nitration of oleic acid (Item No. 90260) in approximately equal proportions *in vivo*.<sup>5</sup> Peroxynitrite, acidified nitrite, and myeloperoxidase in the presence of H<sub>2</sub>O<sub>2</sub> and nitrite, all mediate the nitration of oleic acid. OA-NO<sub>2</sub> 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<sub>2</sub> activates PPAR $\gamma$  approximately 7-fold at a concentration of 1  $\mu$ M and effectively promotes differentiation 3T3-L1 preadipocytes to adipocytes at 3  $\mu$ M.<sup>5</sup>

## 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

Buyer 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.

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