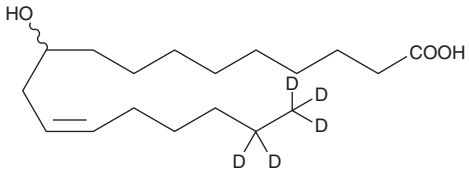
PRODUCT INFORMATION

(±)-10-hydroxy-12(Z)-Octadecenoic Acid-d_5

Item No. 37282

Formal Name:	10-hydroxyoctadec-12Z-enoic-17,17,18,18,18-d_5 acid
Synonym:	10-hydroxy-*cis*-12-Octadecenoic Acid-d_5
MF:	$C_{18}H_{29}D_5O_3$
FW:	303.5
Chemical Purity:	≥95% ((±)-10-hydroxy-12(Z)-Octadecenoic Acid)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_5); ≤1% d_0
Supplied as:	A 100 µg/ml 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-hydroxy-12(Z)-Octadecenoic acid-d_5 is intended for use as an internal standard for the quantification of (±)-10-hydroxy-12(Z)-octadecenoic acid (Item No. 37281) 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

(±)-10-hydroxy-12(Z)-Octadecenoic acid is an oxylipin and a metabolite of linoleic acid (Item Nos. 90150 | 90150.1 | 21909).[1] It is formed from linoleic acid by conjugated linoleic acid-hydrase (CLA-HY) as an intermediate in CLA biosynthesis and can also be produced from linoleic acid by gut microbiota. (±)-10-hydroxy-12(Z)-Octadecenoic acid (30 µM) inhibits LPS-induced nitric oxide (NO) production, ERK phosphorylation, and increases in inducible NO synthase (iNOS) levels in BV-2 microglia cells.[2] It reduces TNF-α, NO2, and IL-10 levels in LPS-stimulated and -unstimulated isolated dendritic bone marrow cells when used at a concentration of 100 µM.[3] (±)-10-hydroxy-12(Z)-Octadecenoic acid (100 µM) decreases LPS-induced maturation of dendritic cells in isolated mouse bone marrow cells.

References

1. Kishino, S., Takeuchi, M., Park, S.-B., *et al.* Polyunsaturated fatty acid saturation by gut lactic acid bacteria affecting host lipid composition. *Proc. Natl. Acad. Sci. USA* **110(44)**, 17808-17813 (2013).
2. Ikeguchi, S., Izumi, Y., Kitamura, N., *et al.* Inhibitory effect of the gut microbial linoleic acid metabolites, 10-oxo-*trans*-11-octadecenoic acid and 10-hydroxy-*cis*-12-octadecenoic acid, on BV-2 microglial cell activation. *J. Pharmacol. Sci.* **138(1)**, 9-15 (2018).
3. Bergamo, P., Luongo, D., Miyamoto, J., *et al.* Immunomodulatory activity of a gut microbial metabolite of dietary linoleic acid, 10-hydroxy-cis-12-octadecenoic acid, associated with improved antioxidant/detoxifying defences. *J. Funct. Foods* **11**, 192-202 (2014).

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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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