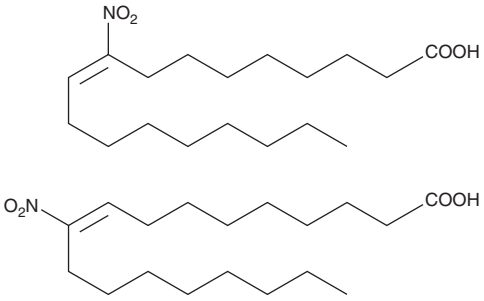
PRODUCT INFORMATION

9(10)-Nitrooleate

Item No. 33896

CAS Registry No.:	1092676-99-7
Formal Name:	9-nitro-9E-octadecenoic acid, 10-nitro-9E-octadecenoate
Synonyms:	9(10)-Nitrooleic Acid, OA-NO_2, 9(10)-nitro-9-*trans*-Octadecenoic Acid
MF:	$C_{18}H_{33}NO_4 \bullet C_{18}H_{33}NO_4$
FW:	654.9
Purity:	≥95% (1:1 mixture of isomers)
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.

Description

9(10)-Nitrooleate is a mixture of the nitroalkene endogenous lipid signaling molecules 9-nitrooleate (Item No. 10008042) and 10-nitrooleate (Item No. 10008043). 9(10)-Nitrooleate is formed by nitration of oleic acid (Item Nos. 90260 | 24659) by peroxynitrite, acidified nitrite, and myeloperoxidase in the presence of hydrogen peroxide (H_2O_2) and nitrite.[1] It induces transactivation of peroxisome proliferator-activated receptor γ (PPARγ) or nuclear factor erythroid 2-related factor 2 (Nrf2) in reporter assays using MCF-7 cells when used at concentrations greater than or equal to 0.3 and greater than or equal to 3 µM, respectively.[2] 9(10)-Nitrooleate also induces transactivation of PPARγ, PPARδ, or PPARα in reporter assays using CV-1 cells in a concentration-dependent manner.[1] It induces adipogenesis in 3T3-L1 preadipocytes and glucose uptake in differentiated 3T3-L1 adipocytes when used at a concentration of 3 µM. *In vivo*, 9(10)-nitrooleate (500 µg/kg every six hours for 24 hours) decreases ischemia-induced increases in plasma levels of blood urea nitrogen, creatinine, and TNF-α and kidney levels of myeloperoxidase (Mpo) and IL-1β and reduces tubular necrosis and tubule dilation in a mouse model of renal ischemia-reperfusion injury.[3]

References

1. Baker, P.R., Lin, Y., Schopfer, F.J., *et al.* Fatty acid transduction of nitric oxide signaling. Multiple nitrated unsaturated acid derivatives exist in human blood and urine serve as endogenous peroxisome proliferator-activated receptor ligands. *J. Biol. Chem.* **280(51)**, 42464-42475 (2005).
2. Bates, D.J.P., Smitherman, P.K., Townsend, A.L., *et al.* Nitroalkene fatty acids mediate activation of Nrf2/ARE-dependent and PPARγ-dependent transcription by distinct signaling pathways and with significantly different potencies. *Biochemistry* **50(36)**, 7765-7773 (2011).
3. Liu, H., Jia, Z., Soodvilai, S., *et al.* Nitro-oleic acid protects the mouse kidney from ischemia and reperfusion injury. *Am. J. Physiol. Renal. Physiol.* **295(4)**, F942-F949 (2008).

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
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