

Product Data Sheet

Product Name: 9(10)-Nitrooleate

Cat. No.: GC92043

Chemical Properties

Cas. No. 1092676-99-7

Chemical Name 9-nitro-9E-octadecenoic acid, 10-nitro-9E-octadecenoate

SMILES CCCCCCCC/C=C([N+])([O-])=O\CCCCCCCC(O)=O.CCCCCCCC/C([N+])([O-])=O=C\CCCCCCCC(O)=O

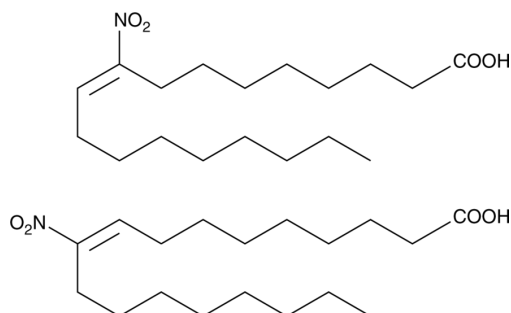
Formula $C_{18}H_{33}NO_4$? $C_{18}H_{33}NO_4$ M.Wt 654.9

Solubility Ethanol: Slightly soluble: 0.1-1 mg/ml Storage $-20^{\circ}C$

General tips For obtaining a higher solubility, please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

9(10)-Nitrooleate is a mixture of the nitroalkene endogenous lipid signaling molecules 9-nitrooleate. 9(10)-Nitrooleate is formed by nitration of oleic acid 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 (PPAR γ) 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

Caution: Product has not been fully validated for medical applications. For research use only.

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and greater than or equal to 3 μ M, respectively.² 9(10)-Nitrooleate also induces transactivation of PPAR γ , PPAR δ , or PPAR α 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 μ M. *In vivo*, 9(10)-nitrooleate (500 μ g/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-1 β 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 PPAR γ -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).

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