

Product Data Sheet

Product Name: 10-oxo-12(Z)-Octadecenoic Acid

Cat. No.: GC52071

Chemical Properties

Cas. No. 103521-29-5

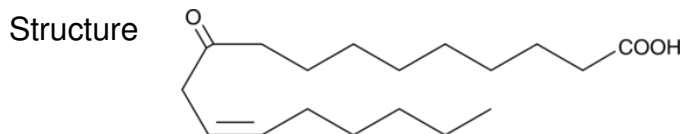
SMILES O=C(C/C=C\CCCC)CCCCCCCCC(O)=O

Formula C₁₈H₃₂O₃ M.Wt 296.5

Solubility DMF: 10 mg/ml, DMSO: 5 mg/ml, Ethanol: 5 mg/ml, PBS (pH 7.2): insol Storage -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°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.



Background

10-oxo-12(Z)-Octadecenoic acid is a metabolite of linoleic acid and an activator of transient receptor potential vanilloid 1 (TRPV1).^{1,2} It is formed from linoleic acid by conjugated linoleic acid dehydrogenase (CLA-DH) via a 10-hydroxy-12(Z)-octadecenoic acid intermediate and can also be produced from linoleic acid by gut microbiota.¹ 10-oxo-12(Z)-Octadecenoic acid (100 μM) selectively increases calcium levels in HEK293 cells expressing TRPV1 over those expressing TRPV2, TRPV3, TRPV4, and TRP melastatin 8 (TRPM8).² It also induces inward currents in HEK293 cells expressing TRPV1, an effect that can be blocked by the TRPV1 antagonist capsazepine. Dietary administration of 10-oxo-12(Z)-octadecenoic acid (0.1% w/w) reduces weight gain and adipose tissue weight and increases the expression of the gene encoding mitochondrial uncoupling protein 1 (Ucp1) in wild-type, but not *Trpv1* knockout, mice fed a high-fat diet. It also decreases plasma glucose and triglyceride levels in diabetic KKAy mice fed a high-fat diet.

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

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1.Kishino, S., Takeuchi, M., Park, S.-B., et al.Polyunsaturated fatty acid saturation by gut lactic acid bacteria affecting host lipid compositionProc. Natl. Acad. Sci. USA110(44)17808-17813(2013) 2.Kim, M., Furuzono, T., Yamakuni, K., et al.10-oxo-12(Z)-octadecenoic acid, a linoleic acid metabolite produced by gut lactic acid bacteria, enhances energy metabolism by activation of TRPV1FASEB J.3(11)5036-5048(2017)

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