

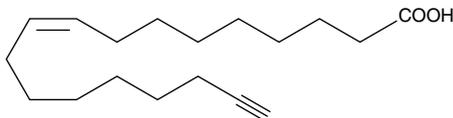
Product Information



Oleic Acid Alkyne

Item No. 9002078

CAS Registry No.: 151333-45-8
Formal Name: (9Z)-9-octadecen-17-ynoic acid
Synonym: Click Tag™ Oleic Acid Alkyne
MF: C₁₈H₃₀O₂
FW: 278.4
Purity: ≥95%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that oleic acid alkyne be stored as supplied at -20°C. It should be stable for at least one year.

Oleic acid alkyne is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of oleic acid alkyne in these solvents is at least 100 mg/ml.

Oleic acid alkyne is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Oleic acid (Item No. 90260) is a monounsaturated fatty acid and is one of the major components of membrane phospholipids. Oleic acid contributes about 17% of the total fatty acids esterified to phosphatidylcholine, the major phospholipid class in porcine platelets.¹ Oleic acid inhibits collagen-stimulated platelet aggregation by approximately 90% when used at a concentration of 10 µg/ml.¹ fMLF-induced neutrophil aggregation and degranulation is inhibited by 55% and 68%, respectively, using 5 µM oleic acid. This inhibition is comparable to that observed using arachidonic acid (Item No. 90010) under the same conditions.² Oleic acid, whether applied extracellularly (EC₅₀ = ~60 µM) to human platelets or released from membrane phospholipids, causes an increase in intracellular calcium levels.³ Oleic acid alkyne is a form of oleic acid with an ω-terminal alkyne. The terminal alkyne group can be used in click chemistry linking reactions, to tag oleic acid with fluorescent or biotinylated labels for analysis of its metabolism and biological activity.⁴⁻⁷

References

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2. Naccache, P.H., Moiski, T.F.P., Volpi, M., *et al.* Modulation of rabbit neutrophil aggregation and degranulation by free fatty acids. *J. Leukoc. Biol.* **36**, 333-340 (1984).
3. Sifafaka-Kapadai, A., Hanahan, D.J., and Javors, M.A. Oleic acid-induced Ca²⁺ mobilization in human platelets: Is oleic acid an intracellular messenger? *J. Lipid Mediat. Cell Signal.* **15**, 215-232 (1997).
4. Kolb, H.C. and Sharpless, K.B. The growing impact of click chemistry on drug discovery. *Drug Discov. Today* **8(24)**, 1128-1137 (2003).
5. Lutz, J.-F. and Zarfshani, Z. Efficient construction of therapeutics, bioconjugates, biomaterials and bioactive surfaces using azide-alkyne “click” chemistry. *Adv. Drug Deliv. Rev.* **60**, 958-970 (2008).
6. Vila, A., Tallman, K.A., Jacobs, A.T., *et al.* Identification of protein targets of 4-hydroxynonenal using click chemistry for *ex vivo* biotinylation of azido and alkynyl derivatives. *Chem. Res. Toxicol.* **21(2)**, 432-444 (2008).
7. Jiang, H., Khan, S., Wang, Y., *et al.* SIRT6 regulates TNF-α secretion through hydrolysis of long-chain fatty acyl lysine. *Nature* **496**, 110-113 (2013).

Related Products

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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