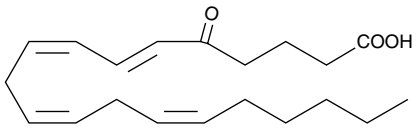
Product Information

5-OxoETE

Item No. 34250

CAS Registry No.:	106154-18-1
Formal Name:	5-oxo-6E,8Z,11Z,14Z-eicosatetraenoic acid
Synonym:	5-KETE
MF:	$C_{20}H_{30}O_3$
FW:	318.5
Purity:	≥95%
Stability:	≥1 year at -80ºC
Supplied as:	A solution in ethanol
UV/Vis:	λ_{max}: 279 nm ε: 22,000



Laboratory Procedures

For long term storage, we suggest that 5-oxoETE be stored as supplied at -80ºC. It should be stable for at least one year.

5-OxoETE 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. 5-OxoETE is miscible in these solvents.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of 5-oxoETE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 5-oxoETE in PBS (pH 7.2) is approximately 0.8 mg/ml. For greater aqueous solubility, 5-oxoETE can be directly disolved in 0.1 M Na_2CO_3 (2 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. Store aqueous solutions of 5-oxoETE on ice and use within 12 hours of preparation. We do not recommend storing the aqueous solution for more than one day.

5-OxoETE is a polyunsaturated keto acid formed by the oxidation of 5-HETE in human neutrophils by a specific dehydrogenase.[1] It stimulates cytosolic calcium levels in neutrophils with an EC_{50} value of 2 nM.[2] 5-OxoETE selectively stimulates the migration and degranulation of eosinophils and activates the MAPK pathway in stimulated neutrophils *via* a specific G protein-coupled receptor.[3-6]

References

1. Powell, W.S., Gravelle, F., and Gravel, S. Metabolism of 5(S)-hydroxy-6,8,11,14-eicosatetraenoic acid and other 5(S)-hydroxyeicosanoids by a specific dehydrogenase in human polymorphonuclear leukocytes. *J. Biol. Chem.* **267**, 19233-19241 (1992).
2. Powell, W.S., Zhang, Y., and Gravel, S. Effects of phorbol myristate acetate on the synthesis of 5-oxo-6,8,11,14-eicosatetraenoic acid by human polymorphonuclear leukocytes. *Biochemistry* **33**, 3927-3933 (1994).
3. O'Flaherty, J.T., Kuroki, M., Nixon, A.B., *et al.* 5-Oxo-eicosanoids and hematopoietic cytokines cooperate in stimulating neutrophil function and the mitogen-activated protein kinase pathway. *J. Biol. Chem.* **271**, 17821-17828 (1996).
4. O'Flaherty, J.T., Kuroki, M., Nixon, A.B., *et al.* 5-Oxo-eicosatetraenoate is a broadly active, eosinophil-selective stimulus for human granulocytes. *J. Immunol.* **157**, 336-342 (1996).
5. Hosoi, T., Koguchi, Y., Sugikawa, E., *et al.* Identification of a novel human eicosanoid receptor coupled to Gi/o. *J. Biol. Chem.* **277** (35), 31459-31465 (2002).
6. Jones, C.E., Holden, S., Tenaillon, L., *et al.* Expression and characterization of a 5-oxo-6E, 8Z, 11Z, 14Z-eicosatetraenoic acid receptor highly expressed on human eosinophils and neutrophils. *Mol. Pharmacol.* **63(3)**, 471-477 (2003).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/34250

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

Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com