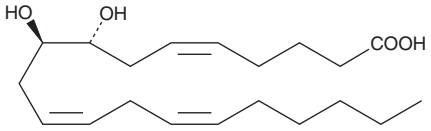
PRODUCT INFORMATION

(±)8(9)-DiHET

Item No. 51351

CAS Registry No.:	192461-96-4
Formal Name:	(±)8,9-dihydroxy-5Z,11Z,14Z-eicosatrienoic acid
Synonym:	(±)8,9-DiHETrE
MF:	$C_{20}H_{34}O_4$
FW:	338.5
Purity:	≥98%
Supplied as:	A solution in ethanol
Storage:	-20°C
Stability:	≥2 years



NOTE: Relative stereochemistry shown in chemical structure

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(±)8(9)-DiHET 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 (±)8(9)-DiHET in these solvents is approximately 50 mg/ml.

(±)8(9)-DiHET is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of (±)8(9)-DiHET should be diluted with the aqueous buffer of choice. The solubility of (±)8(9)-DiHET in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)8(9)-DiHET is an oxylipin and a racemic mixture of the arachidonic acid metabolites 8(S),9(R)-DiHET and 8(R),9(S)-DiHET.[1] It is formed from arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) *via* an (±)8(9)-EET (Item No. 50351) intermediate by epoxide hydrolases. (±)8(9)-DiHET (1 µM) induces cAMP production in primary human coronary artery smooth muscle cells.[2] Plasma levels of (±)8(9)-DiHET are increased in a mouse model of osteoarthritic pain induced by destabilization of the medial meniscus, an effect that can be reversed by the soluble epoxide hydrolase (sEH) inhibitor TPPU (Item No. 11120).[3] Spinal cord levels of (±)8(9)-DiHET are also increased in a rat model of surgically-induced acute spinal cord injury (SCI).[4]

References

1. Oliw, E.H., Guengerich, F.P., and Oates, J.A. Oxygenation of arachidonic acid by hepatic monooxygenases. Isolation and metabolism of four epoxide intermediates. *J. Biol. Chem.* **257(7)**, 3771-3781 (1982).
2. Matsumoto, N., Singh, N., Lee, K.S., *et al.* The epoxy fatty acid pathway enhances cAMP in mammalian cells through multiple mechanisms. *Prostaglandins Other Lipid Mediat.* **162**, 106662 (2022).
3. Gowler, P.R.W., Turnbull, J., Shahtaheri, M., *et al.* Clinical and preclinical evidence for roles of soluble epoxide hydrolase in osteoarthritis knee pain. *Arthritis Rheumatol.* **74(4)**, 623-633 (2022).
4. Pang, Y., Liu, X., Zhao, C., *et al.* LC-MS/MS-based arachidonic acid metabolomics in acute spinal cord injury reveals the upregulation of 5-LOX and COX-2 products. *Free Radic. Biol. Med.* **193(Pt 1)**, 363-372 (2022).

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