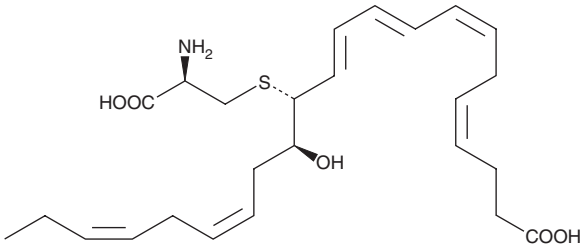
PRODUCT INFORMATION

MCTR3

Item No. 19067

CAS Registry No.:	1784701-63-8
Formal Name:	13R-[[(2R)-2-amino-2-carboxyethyl] thio]-14S-hydroxy-4Z,7Z,9E,11E,16Z,19Z-docosahexaenoic acid
Synonyms:	13-cysteinyl-14-hydroxy-Docosahexaenoic Acid, Maresin Conjugates in Tissue Regeneration 3, Maresin Sulfido Conjugate 3
MF:	$C_{25}H_{37}NO_5S$
FW:	463.6
Purity:	≥95%
UV/Vis.:	λ_{max}: 282 nm
Supplied as:	A 100 µg/ml solution in ethanol
Storage:	-80°C
Stability:	≥2 years



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

Laboratory Procedures

MCTR3 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 MCTR3 in these solvents is approximately 50 mg/ml.

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 MCTR3 is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of MCTR3 in PBS, pH 7.2, is approximately 0.1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Maresin conjugates in tissue regeneration 3 (MCTR3) is a specialized pro-resolving mediator (SPM) synthesized from docosahexaenoic acid (DHA; Item No. 90310) in macrophages.[1,2] DHA is oxidized to maresin 1 (MaR1; Item No. 10878), which is converted to MCTR1 (Item No. 17007) by glutathione S-transferase Mu 4 or leukotriene C_4 synthase, then to MCTR2 (Item No. 17008) by γ-glutamyl transferase, and to MCTR3 by dipeptidase.[3] MCTR3 accelerates tissue regeneration in planaria (1 and 100 nM) approximately as potently as MCTR2 and more potently than MCTR1.[1] Pretreatment with MCTR3 prior to *E. coli* administration in mice reduces neutrophil infiltration, shortens the inflammatory resolution period, and increases phagocytosis of *E. coli* by macrophages. When administered at a dose of 100 ng 12h post *E. coli* infection in a mouse model of peritonitis, MCTR3 selectively reduces the amount of the eicosanoids PGD_2 (Item No. 12010), PGE_2 (Item No. 14010), $PGF_{2\alpha}$ (Item No. 16010), and TXB_2 (Item No. 19030) in the exudate.

References

1. Serhan, C.N. *Nature* **510(7503)**, 92-101 (2014).
2. Dalli, K.J., Sanger, J.M., Rodriguez, A.R., *et al. PLoS One* **11(2)**, e0149319 (2016).
3. Dalli, J., Vlasakov, I., Riley, I.R., *et al. Proc. Natl. Acad. Sci. USA* **113(43)**, 12232-12237 (2016).

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