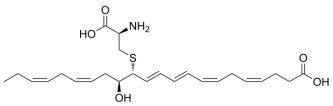
MCTR3

Cat. No.:	HY-125516
CAS No.:	1784701-63-8
Molecular Formula:	$C_{25}H_{37}NO_5S$
Molecular Weight:	463.63
Target:	Others
Pathway:	Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

MCTR3 is a potent cytokine of pro-resolving mediating maresin conjugates in tissue regeneration (MCTR), which reduces the inflammatory response and promotes the tissue regeneration. MCTR3 exhibits potency in ameliorating LPS-induced acute lung injury and arthritis[1][2][3].

In Vitro

MCTR3 (1 nM) alleviates LPS-induced cellular damage and oxidative stress, reduces apoptosis and autophagy-related protein production in cells MLE12 through the ALX/PINK1 pathway[1].

MCTR3 (1 nM) enhances efferocytosis and bacterial phagocytosis by exudate leukocytes, reduces neutrophil infiltration and eicosanoids[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Immunofluorescence[1]

Cell Line:	MLE12
Concentration:	1 nM
Incubation Time:	24 h
Result:	Decreased LPS-stimulated expressions of PINK1 and Parkin.

Western Blot Analysis[1]

Cell Line:	MLE12
Concentration:	1 nM
Incubation Time:	24 h
Result:	Decreased levels of Bax, Bak, Cyto C and LC3BII/I, increased levels of BCL2 and Bcl-xl.

In Vivo

MCTR3 (2 ng/g, i.p., single dose) reduces inflammation and oxidative response in the LPS-induced acute lung injury and decreases the apoptosis in C57BL/6 mice[1].

MCTR3 (1-100 nM, in cold water) stimulates tissue regeneration in surgical injuried Planaria in a dose-dependent manner with a 50% tissue regeneration TRI_{50} of 2.5 days[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Lipopolysaccharide induced acute lung injury in C57BL6 mice[1]
Dosage:	2 ng/g
Administration:	i.p., single dose
Result:	Reduced inflammatory cell infiltration and protein accumulation in bronchoalveolar lavage fluid (BALF), reduced MDA levels and increased SOD activity in lung tissue. Decreased levels of pro-inflammatory cytokine in serum.

Animal Model:	Surgical injury in Planaria[2]
Dosage:	1-100 nM
Administration:	In cold water for 6 days
Result:	Accelerated tissue regeneration in a dose-dependent manner with a TRI_{50} of 2.5 days.

REFERENCES

[1]. Zhuang R, et al., MCTR3 reduces LPS-induced acute lung injury in mice via the ALX/PINK1 signaling pathway. Int Immunopharmacol. 2021 Jan;90:107142.

[2]. Dalli J et al., Identification and Actions of a Novel Third Maresin Conjugate in Tissue Regeneration: MCTR3. PLoS One. 2016 Feb 16;11(2):e0149319.

[3]. Pistorius K, et al., MCTR3 reprograms arthritic monocytes to upregulate Arginase-1 and exert pro-resolving and tissue-protective functions in experimental arthritis. EBioMedicine. 2022 May;79:103974.

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