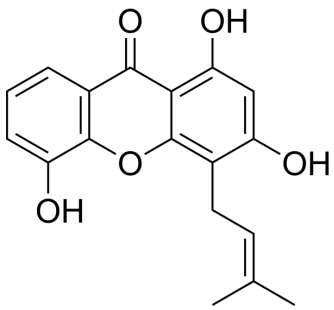
1,3,5-Trihydroxy-4-prenylxanthone

Cat. No.:	HY-N10156
CAS No.:	53377-61-0
Molecular Formula:	$C_{18}H_{16}O_5$
Molecular Weight:	312.32
Target:	Na+/H+ Exchanger (NHE); Phosphodiesterase (PDE); NO Synthase
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease; Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

1,3,5-Trihydroxy-4-prenylxanthone is a Na^+/H^+ exchange system (Na+/H+ Exchanger (NHE)) inhibitor with a minimum inhibitory concentration of 10 μg/mL[1]. 1,3,5-Trihydroxy-4-prenylxanthone is a phosphodiesterase type 5 (PDE5) (Phosphodiesterase (PDE)) inhibitor with an IC_{50} value of 3.0 μM[3]. 1,3,5-Trihydroxy-4-prenylxanthone inhibits Lipopolysaccharide (LPS) (Lipopolysaccharides (HY-D1056))-induced NO production in RAW264.7 macrophages, and has anti-inflammatory activities[2].

IC_{50} & Target

PDE5 3 μM (IC_{50})	iNOS	Na+/H+ Exchanger

In Vitro

1,3,5-Trihydroxy-4-prenylxanthone (10-30 μM; 18 hours) shows a suppression of LPS-induced iNOS expression through abolishing IKK phosphorylation, IκB degradation and NF-κB nuclear translocation. 1,3,5-Trihydroxy-4-prenylxanthone inhibits LPS-induced iNOS expression by interference with the posttranslational modification of IRAK-1 resulted in blocking TAK1-mediated activation of IKK and MAPKs signal transduction to down-regulate NF-κB and AP-1 activation[2].

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

Western Blot Analysis[2]

Cell Line:	RAW264.7 macrophages
Concentration:	10 μM, 20 μM and 30 μM
Incubation Time:	18 hours
Result:	Showed suppression of LPS-induced iNOS expression. Suppressed the nuclear level of c-Fos and c-Jun (major components of activator protein-1, AP-1) and the phosphorylated level of upstream signal molecules, such as JNK and ERK.

REFERENCES

[1]. [1] M Kobayashi, et al. Indonesian medicinal plants. XXI. Inhibitors of Na+/H+ exchanger from the bark of Erythrina variegata and the roots of Maclura cochinchinensis. Chem Pharm Bull (Tokyo). 1997 Oct;45(10):1615-9.

[2]. Wen-Fei Chiou, et al. 1,3,5-trihydroxy-4-prenylxanthone represses lipopolysaccharide-induced iNOS expression via impeding posttranslational modification of IRAK-1.

Biochem Pharmacol. 2011 Mar 15;81(6):752-60.

[3]. Chalisa Sabphon, et al. Phosphodiesterase inhibitory activity of the flavonoids and xanthones from Anaxagorea luzonensis. Nat Prod Commun. 2015 Feb;10(2):301-3.

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