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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

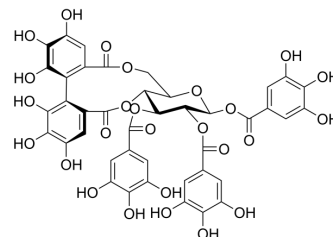
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Tellimagrandin II

Cat. No.:	HY-N9386
CAS No.:	81571-72-4
Molecular Formula:	C ₄₁ H ₃₀ O ₂₆
Molecular Weight:	938.66
Target:	Bacterial; Antibiotic
Pathway:	Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (106.53 mM; Need ultrasonic)					
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
		1 mM		1.0653 mL	5.3267 mL	10.6535 mL
		5 mM		0.2131 mL	1.0653 mL	2.1307 mL
		10 mM		0.1065 mL	0.5327 mL	1.0653 mL
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (2.66 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (2.66 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (2.66 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	Tellimagrandin II (Eugenin), with oral activity, is the first intermediate of the ellagitannin series derived from ⁴ C ₁ -glucose. It inhibits the resistance of Staphylococcus aureus by disrupting the integrity of the cell wall, leading to the loss of cytoplasmic contents. Additionally, Tellimagrandin II exhibits anti-inflammatory effects and inhibits acetylcholinesterase (AChE) activity, improving memory impairment. Tellimagrandin II holds potential for research in the fields of antibacterial, anti-inflammatory, and neurodegenerative diseases ^{[1][2][3][4]} .
In Vitro	Tellimagrandin II (40 µg/mL, 24 hours) disrupts the cell wall integrity of Staphylococcus aureus ^[2] . Tellimagrandin II (40 µg/mL, 5 hours) significantly inhibits mecA mRNA and PBP2a protein expression in Methicillin-Resistant Staphylococcus aureus ^[2] .

Tellimagrandin II (50 μ M, 6 hours) significantly inhibits LPS (HY-D1056)-induced NO production as well as NOS2 mRNA and protein expression in RAW264.7 cells^[3].
 Tellimagrandin II (25 or 50 μ M, 12 hours) significantly inhibits LPS (HY-D1056)-induced COX-2 protein levels and PGE2 production in RAW264.7 cells^[3].
 Tellimagrandin II (12.5-50 μ M, 10 minutes) shows significant AChE inhibitory activity, with the IC₅₀ of 18.6 μ M^[4]
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis^[2]

Cell Line:	Methicillin-Resistant Staphylococcus aureus
Concentration:	40 μ g/mL
Incubation Time:	5 h
Result:	Significantly reduced PBP2a protein levels.

Real Time qPCR^[2]

Cell Line:	Methicillin-Resistant Staphylococcus aureus
Concentration:	40 μ g/mL
Incubation Time:	5 h
Result:	Significantly reduced mecA mRNA expression.

Real Time qPCR^[3]

Cell Line:	LPS (HY-D1056)-induced inflammation RAW264.7 cells (murine macrophages)
Concentration:	50 μ M
Incubation Time:	6 h
Result:	Significantly reduced NOS2 gene expression levels induced by LPS (HY-D1056).

Western Blot Analysis^[3]

Cell Line:	LPS (HY-D1056)-induced inflammation RAW264.7 cells (murine macrophages)
Concentration:	25 $\times$ 50 μ M
Incubation Time:	12 h
Result:	Significantly reduced LPS (HY-D1056)-induced COX-2 protein levels and PGE2 production.

In Vivo

Tellimagrandin II (100 and 200 mg/kg, p.o., once daily for 10 days) improved learning and memory functions in Scopolamine (HY-N0296)-induced amnesiac ICR mice^[4].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Scopolamine (HY-N0296)-induced amnesiac ICR mouse model ^[4]
Dosage:	100 and 200 mg/kg
Administration:	Oral gavage (p.o.), once daily for 10 days
Result:	Improved learning and memory functions in the passive avoidance and water maze tests.

CUSTOMER VALIDATION

- J Pharm Biomed Anal. 2023 May 2;233:115441.

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REFERENCES

- [1]. Lin CY, et al. Lipopolysaccharide-Induced Nitric Oxide and Prostaglandin E2 Production Is Inhibited by Tellimagrandin II in Mouse and Human Macrophages. *Life (Basel)*. 2021 Apr 30;11(5):411.
- [2]. Chen LG, et al. Hydrolysable Tannins Exhibit Acetylcholinesterase Inhibitory and Anti-Glycation Activities In Vitro and Learning and Memory Function Improvements in Scopolamine-Induced Amnesiac Mice. *Biomedicines*. 2021 Aug 23;9(8):1066.
- [3]. Ruth Niemetz, et al. Oxidation of pentagalloylglucose to the ellagitannin, tellimagrandin II, by a phenol oxidase from *Tellima grandiflora* leaves. *Phytochemistry*. 2003 Feb;62(3):301-6.
- [4]. Yu-Wei Chang, et al. Tellimagrandin II, A Type of Plant Polyphenol Extracted from *Trapa bispinosa* Inhibits Antibiotic Resistance of Drug-Resistant *Staphylococcus aureus*. *Int J Mol Sci*. 2019 Nov 18;20(22):5790.
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Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA