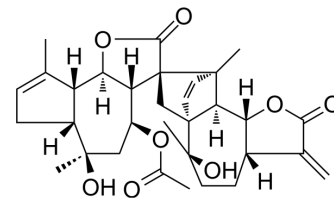


Handelin

Cat. No.:	HY-N2083
CAS No.:	62687-22-3
Molecular Formula:	C ₃₂ H ₄₀ O ₈
Molecular Weight:	552.66
Target:	NF-κB
Pathway:	NF-κB
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 16.67 mg/mL (30.16 mM; Need ultrasonic)						
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg	
				1 mM	1.8094 mL	9.0472 mL	18.0943 mL
				5 mM	0.3619 mL	1.8094 mL	3.6189 mL
10 mM				0.1809 mL	0.9047 mL	1.8094 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: 1.67 mg/mL (3.02 mM); Suspended solution; Need ultrasonic						
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 1.67 mg/mL (3.02 mM); Suspended solution; Need ultrasonic						
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 1.67 mg/mL (3.02 mM); Clear solution						

BIOLOGICAL ACTIVITY

Description	Handelin is a guaianolide dimer from <i>Chrysanthemum boreale</i> that has potent anti-inflammatory activity by down-regulating NF-κB signaling and pro-inflammatory cytokine production ^[1] .
In Vitro	Handelin (Compound 1; 10-40 μM; RAW 264.7 cells) treatment suppresses the LPS-induced (1 μg/mL) overexpression of iNOS and COX-2 protein levels in a concentration-dependent manner. Handelin also suppresses the induction of pro-inflammatory cytokines TNF-α and IL-1β in LPS-stimulated RAW 264.7 cells. Handelin also suppresses the activation of mitogen-activated protein kinases, including ERK and JNK signaling ^[1] . Handelin (Compound 1; 10-40 μM; RAW 264.7 cells) treatment significantly reduces the iNOS and COX-2 mRNA levels in LPS-stimulated RAW 264.7 cells. The transcriptional activity of NF-κB stimulated with LPS is also suppressed by Handelin. In

addition, the LPS-stimulated upregulation of miRNA-155 expression is suppressed by Handelin^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR^[1]

Cell Line:	RAW 264.7 cells
Concentration:	10 μ M, 20 μ M, 40 μ M
Incubation Time:	5 hours
Result:	iNOS and COX-2 mRNA levels were significantly reduced. The transcriptional activity of NF- κ B stimulated with LPS was also suppressed and the LPS-stimulated upregulation of miRNA-155 expression was also suppressed.

Western Blot Analysis^[1]

Cell Line:	RAW 264.7 cells
Concentration:	10 μ M, 20 μ M, 40 μ M
Incubation Time:	
Result:	Suppressed the LPS-induced overexpression of iNOS and COX-2 protein levels in a concentration-dependent manner. Suppressed the induction of pro-inflammatory cytokines TNF- α and IL-1 β , and also also suppressed the activation of mitogen-activated protein kinases, including ERK and JNK signaling in LPS-stimulated RAW 264.7 cells.

In Vivo

Handelin (Compound 1; 10-20 mg/kg; oral administration; for 30 minutes; male Sprague-Dawley rats) treatment inhibits acute inflammation in carrageenan-induced paw edema model. The serum level of IL-1 β is also inhibited by Handelin in a carrageenan-induced paw edema model ^[1].

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

Animal Model:	Male Sprague-Dawley (SD) rats (150-170 g, 5 weeks old) injected with carrageenan ^[1]
Dosage:	10 mg/kg, 20 mg/kg
Administration:	Oral administration; for 30 minutes
Result:	Inhibited acute inflammation in carrageenan-induced paw. The serum level of IL-1 β was also inhibited.

REFERENCES

[1]. Y Pyee, et al. Suppression of inflammatory responses by handelin, a guaianolide dimer from Chrysanthemum boreale, via downregulation of NF- κ B signaling and pro-inflammatory cytokine production. J Nat Prod. 2014 Apr 25;77(4):917-24.

Caution: Product has not been fully validated for medical applications. For research use only.

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