Lucidone

Cat. No.: HY-N3364

CAS No.: 19956-53-7

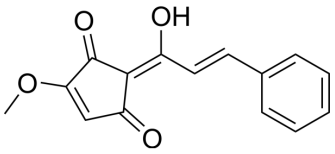
Molecular Formula: $C_{15}H_{12}O_4$

Molecular Weight: 256.25

Target: TNF Receptor; NF-κB; NO Synthase; COX; JNK; p38 MAPK; IKK; Flavivirus; Dengue virus

Pathway: Apoptosis; NF-κB; Immunology/Inflammation; MAPK/ERK Pathway; Anti-infection

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Lucidone, an anti-inflammatory agent that can be isolated from the fruit of Lindera erythrocarpa Makino. Lucidone inhibits LPS-induced NO and PGE_2 production in RAW 264.7 mouse macrophages. Lucidone also decreases TNF-α secretion, iNOS and COX-2 expression. Lucidone prevents NF-κB translocation and inhibits JNK and p38MAPK signals. Lucidone also has inhibitory activity against Dengue virus (DENV) (EC_{50}=25 μM)[1][2].

IC_{50} & Target

p38 MAPK	JNK	p50	p65
COX-2	NF-κB	iNOS	IKK

In Vitro

Lucidone (10 μg/mL, 25 μg/mL; 1 h or 20 h) decreases the increase of TNF-α secretion (20 h) as well as PGE_2 production (1 h) in LPS-induced (1 μg/mL) RAW 264.7 macrophages[1].

Lucidone (10 μg/mL, 25 μg/mL; 8 h) inhibits iNOS and COX-2 expression in LPS-induced (1 μg/mL) RAW 264.7 macrophages[1].

Lucidone (10 μg/mL, 25 μg/mL; 1 h) reduces the levels of p65 and of the p50 subunits of NF-κB, and phosphorylated IKK in LPS-induced (1 μg/mL) RAW 264.7 macrophages[1].

Lucidone (0-40 μM; 3 d) decreases the virus titer of DENV in Huh-7 cells infected with DENV[2].

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

Western Blot Analysis[1]

Cell Line:	RAW 264.7 macrophages
Concentration:	5 μg/mL, 10 μg/mL, 25 μg/mL
Incubation Time:	1 hour
Result:	Inhibited LPS-induced NF-κB nuclear translocation, decreased the level of p65 and of the p50 subunits at 10 μg/mL and 25 μg/mL. Inhibited the phosphorylation of IKK at 10 μg/mL and 25 μg/mL.

Cell Viability Assay[2]

Cell Line:	Huh-7 cells infected with DENV

Concentration:	5 μM, 10 μM, 20 μM, and 40 μM
Incubation Time:	3 days
Result:	Showed no significant cell viability on Huh-7 cells, while leading to a decrease on viral load of DENV.

In Vivo

Lucidone (1 mg/kg; intracranial injection; 3 times for 1 week) significantly increases the survival rate and body weight of DENV-infected mice[2].

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Animal Model:	DENV-infected ICR mice[2]
Dosage:	0.4 mg/kg, 1 mg/kg
Administration:	Intracranial injection; 3 times dose at day 2, 4, 6 after DENV infection
Result:	Increased the survival rate and body weight of DENV-infected mice on day 7.

REFERENCES

[1]. Senthil Kumar KJ, et aL. Lucidone inhibits iNOS and COX-2 expression in LPS-induced RAW 264.7 murine macrophage cells via NF-kappaB and MAPKs signaling pathways. Planta Med. 2009 Apr;75(5):494-500.

[2]. Chen WC, et al. Lucidone suppresses dengue viral replication through the induction of heme oxygenase-1. Virulence. 2018 Jan 1;9(1):588-603.

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