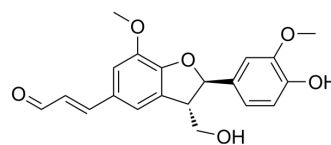


Balanophonin

Cat. No.:	HY-N10782
CAS No.:	80286-36-8
Molecular Formula:	C ₂₀ H ₂₀ O ₆
Molecular Weight:	356.37
Target:	Apoptosis; COX; TNF Receptor; p38 MAPK
Pathway:	Apoptosis; Immunology/Inflammation; MAPK/ERK Pathway
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Balanophonin is an anti-inflammatory and anti-cancer agent. Balanophonin inhibits microglial activation and neurodegeneration via inhibiting activated microglia-induced apoptosis ^[1] .																	
IC₅₀ & Target	COX-2	p38																
In Vitro	<p>Balanophonin (1-10 μM; 24 h) reduces Lipopolysaccharides (LPS; HY-D1056)-mediated TLR4 activation and NO production in BV2 cells^[1].</p> <p>Balanophonin (1-10 μM; 6 h) reduces iNOS and COX2 protein expression and TNF-α and IL-1β production in LPS-induced microglial cells^[1].</p> <p>Balanophonin (1-10 μM; 30 min) effectively inhibits MAPK activation^[1].</p> <p>Balanophonin (1-10 μM; 24 h) inhibits neuronal cell death resulting from LPS-activated microglia by regulating cleaved caspase-3 and poly ADP ribose polymerase (PARP) cleavage in N2a cells^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>LPS-activated BV-2 cells</td> </tr> <tr> <td>Concentration:</td> <td>1, 5, and 10 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>30 min for MAPKs, 6 h for iNOS and COX2 and 24 h for PGE2, TNF-α and IL-1β</td> </tr> <tr> <td>Result:</td> <td>Downregulated TLR4. Reduced iNOS and COX2 expression. Significantly reduced the secretion of TNF-α and IL-1β. Decreased the phosphorylation of MAPKs such as pERK, pJNK, and p-p38.</td> </tr> </table> <p>Western Blot Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Neuroblastoma N2a cells</td> </tr> <tr> <td>Concentration:</td> <td>1, 5, and 10 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Slightly increased Bcl-2. Inhibited caspase-3 activation and PARP cleavage.</td> </tr> </table>		Cell Line:	LPS-activated BV-2 cells	Concentration:	1, 5, and 10 μM	Incubation Time:	30 min for MAPKs, 6 h for iNOS and COX2 and 24 h for PGE2, TNF-α and IL-1β	Result:	Downregulated TLR4. Reduced iNOS and COX2 expression. Significantly reduced the secretion of TNF-α and IL-1β. Decreased the phosphorylation of MAPKs such as pERK, pJNK, and p-p38.	Cell Line:	Neuroblastoma N2a cells	Concentration:	1, 5, and 10 μM	Incubation Time:	24 h	Result:	Slightly increased Bcl-2. Inhibited caspase-3 activation and PARP cleavage.
Cell Line:	LPS-activated BV-2 cells																	
Concentration:	1, 5, and 10 μM																	
Incubation Time:	30 min for MAPKs, 6 h for iNOS and COX2 and 24 h for PGE2, TNF-α and IL-1β																	
Result:	Downregulated TLR4. Reduced iNOS and COX2 expression. Significantly reduced the secretion of TNF-α and IL-1β. Decreased the phosphorylation of MAPKs such as pERK, pJNK, and p-p38.																	
Cell Line:	Neuroblastoma N2a cells																	
Concentration:	1, 5, and 10 μM																	
Incubation Time:	24 h																	
Result:	Slightly increased Bcl-2. Inhibited caspase-3 activation and PARP cleavage.																	

REFERENCES

[1]. Lim SY, et al. A New Neolignan Derivative, Balanophonin Isolated from *Firmiana simplex* Delays the Progress of Neuronal Cell Death by Inhibiting Microglial Activation. *Biomol Ther (Seoul)*. 2017 Sep 1;25(5):519-527.

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