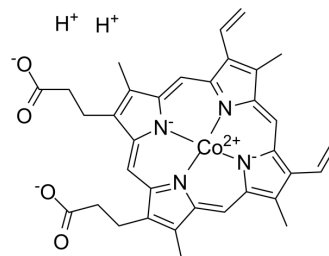


Cobalt protoporphyrin IX

Cat. No.:	HY-134608
CAS No.:	14325-03-2
Molecular Formula:	C ₃₄ H ₃₂ CoN ₄ O ₄
Molecular Weight:	619.58
Target:	Reactive Oxygen Species; Influenza Virus
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Cobalt protoporphyrin IX (Co-PPIX) is a potent and specific heme oxygenase-1 (HO-1) inducer. Cobalt protoporphyrin IX exhibits broad-spectrum antiviral activities against Influenza A virus (IAV) ^[1] .																
In Vitro	<p>Cobalt protoporphyrin IX (2 μM; 0-24 h) increases the intracellular protein levels of HO-1 in a time-dependent manner in MDCK cells and RAW264.7 cells^[1].</p> <p>Cobalt protoporphyrin IX shows antiviral activity against influenza viruses with IC₅₀s of 0.40 ± 0.16, 0.42 ± 0.15, 0.46 ± 0.19, 0.34 ± 0.05 and 0.64 ± 0.30 μM against Empty Cell A/FortMonmouth /1/1947, A/TianjinJinnan /15/2009, A/Wuhan /359/1995, A/FujianTongan /196/2009 and BY/FujianXinluo /54/2006, respectively^[1].</p> <p>Cobalt protoporphyrin IX (0.25-2 μM; 18 or 24 h) inhibits IAV replication through augmenting IFN response, and the anti-IAV activity is not dependent on the catalytic function of HO-1^[1].</p> <p>Anti-IAV activity of HO-1 induced by Cobalt protoporphyrin IX (2 μM; 0-6 h) may depend on IRF3 phosphorylation and translocation, in order to enhance antiviral IFN response^[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>MDCK cells and RAW264.7 cells</td> </tr> <tr> <td>Concentration:</td> <td>2 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>0, 3, 6, 12 and 24 h</td> </tr> <tr> <td>Result:</td> <td>Significantly increased the intracellular protein levels of HO-1 in a time-dependent manner in MDCK cells and RAW264.7 cells.</td> </tr> </table> <p>Real Time qPCR^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>RAW264.7 cells were infected with IAV A/Fort Monmouth/1/1947 (0.2 MOI)</td> </tr> <tr> <td>Concentration:</td> <td>0.25, 0.5, 1 and 2 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>18 h</td> </tr> <tr> <td>Result:</td> <td>Enhanced mRNA expressions of IFN-α/β, as well as protein expressions of some ISGs, such as IFN-inducible transmembrane protein 3 (IFITM3), double-stranded RNA-dependent protein kinase (PKR) and 2'-5'-oligoadenylate synthetase 1 (OAS1), in a dose-dependent</td> </tr> </table>	Cell Line:	MDCK cells and RAW264.7 cells	Concentration:	2 μM	Incubation Time:	0, 3, 6, 12 and 24 h	Result:	Significantly increased the intracellular protein levels of HO-1 in a time-dependent manner in MDCK cells and RAW264.7 cells.	Cell Line:	RAW264.7 cells were infected with IAV A/Fort Monmouth/1/1947 (0.2 MOI)	Concentration:	0.25, 0.5, 1 and 2 μM	Incubation Time:	18 h	Result:	Enhanced mRNA expressions of IFN-α/β, as well as protein expressions of some ISGs, such as IFN-inducible transmembrane protein 3 (IFITM3), double-stranded RNA-dependent protein kinase (PKR) and 2'-5'-oligoadenylate synthetase 1 (OAS1), in a dose-dependent
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manner.

Western Blot Analysis^[1]

Cell Line: RAW264.7 cells or RAW264.7 cells infected with IAV A/Fort Monmouth/1/1947 (0.2 MOI)

Concentration: 2 μ M

Incubation Time: 0, 2, 4 and 6 h

Result: Increased protein levels of IRF3 and p-IRF3. Promoted the cytoplasmic protein levels of IRF3 and p-IRF3 in RAW264.7 cells following the enhancement of HO-1 protein expression after 6 h. Induced nuclear IRF3 and nuclear p-IRF3 accumulation within 6 h of treatment.

REFERENCES

[1]. Ma LL, et al. heme oxygenase-1 agonist CoPP suppresses influenza virus replication through IRF3-mediated generation of IFN- α/β . *Virology*. 2019 Feb;528:80-88.

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

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