



# SZABO SCANDIC

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## Produktinformation



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Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Lieferung & Zahlungsart

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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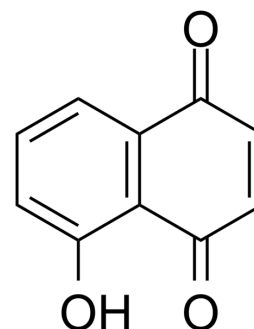
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## Juglone

Cat. No.:	HY-N6949
CAS No.:	481-39-0
Molecular Formula:	C <sub>10</sub> H <sub>6</sub> O <sub>3</sub>
Molecular Weight:	174.16
Target:	Bacterial; NF-κB; Toll-like Receptor (TLR); Apoptosis
Pathway:	Anti-infection; NF-κB; Immunology/Inflammation; Apoptosis
Storage:	4°C, protect from light

\* The compound is unstable in solutions, freshly prepared is recommended.



### SOLVENT & SOLUBILITY

#### In Vitro

Ethanol : 10 mg/mL (57.42 mM; Need ultrasonic; DMSO can inactivate Juglone's activity)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	5.7418 mL	28.7092 mL	57.4185 mL
	5 mM	1.1484 mL	5.7418 mL	11.4837 mL
	10 mM	0.5742 mL	2.8709 mL	5.7418 mL

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

Juglone (5-hydroxy-1,4-naphthalenedione) is a yellow dye that can be extracted from *Juglans regia*. Juglone induces apoptosis through the mitochondrial pathway. Juglone has antibacterial and antitumor activity<sup>[1][2][3]</sup>.

#### In Vitro

Juglone (0-500 μg/mL, 15 h) shows significant antibacterial activity against *Staphylococcus aureus*, with MIC values ranging from 64-512 μg/mL<sup>[1]</sup>.

Juglone (5-20 μM, 24 h) induces apoptosis of SGC-7901 cells through the mitochondrial pathway mediated by ROS production and the decrease of Bcl-2/Bax ratio<sup>[2]</sup>.

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

Cell Cytotoxicity Assay<sup>[2]</sup>

Cell Line:	SGC-7901
Concentration:	5, 10, 15, 20 μM
Incubation Time:	24 h
Result:	Inhibited cell growth in a dose-dependent manner.

	<p>Apoptosis Analysis <sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>SGC-7901</td> </tr> <tr> <td>Concentration:</td> <td>5, 10, 15, 20 <math>\mu</math>M</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Increased the number of early apoptotic cells.</td> </tr> </table> <p>Western Blot Analysis <sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>SGC-7901</td> </tr> <tr> <td>Concentration:</td> <td>5, 10, 15, 20 <math>\mu</math>M</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Decreased the expression of Bcl-2 and increased the Bax protein.</td> </tr> </table>	Cell Line:	SGC-7901	Concentration:	5, 10, 15, 20 $\mu$ M	Incubation Time:	24 h	Result:	Increased the number of early apoptotic cells.	Cell Line:	SGC-7901	Concentration:	5, 10, 15, 20 $\mu$ M	Incubation Time:	24 h	Result:	Decreased the expression of Bcl-2 and increased the Bax protein.
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<b>In Vivo</b>	<p>Juglone (0.25 or 1 mg/kg, oral, 70 days) prevents metabolic endotoxemia-induced hepatitis and neuroinflammation by inhibiting TLR4/NF-<math>\kappa</math>B signaling pathway in high-fat diet rats<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>High-fat diet rats mode<sup>[3]</sup></td> </tr> <tr> <td>Dosage:</td> <td>0.25 or 1 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>p.o. for 70 days</td> </tr> <tr> <td>Result:</td> <td>Regulated the expression of s TNF-<math>\alpha</math>, IL-1<math>\beta</math> and IL-6. Inhibited the TLR4 expression and NF-kappa activity.</td> </tr> </table>	Animal Model:	High-fat diet rats mode <sup>[3]</sup>	Dosage:	0.25 or 1 mg/kg	Administration:	p.o. for 70 days	Result:	Regulated the expression of s TNF- $\alpha$ , IL-1 $\beta$ and IL-6. Inhibited the TLR4 expression and NF-kappa activity.								
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## CUSTOMER VALIDATION

- Int J Biol Macromol. 2021 Apr 24.
- Journal of Traditional Chinese Medical Sciences. 31 July 2022.

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## REFERENCES

- [1]. Zmantar T, et al. Use of juglone as antibacterial and potential efflux pump inhibitors in Staphylococcus aureus isolated from the oral cavity. Microb Pathog. 2016 Dec;101:44-49.
- [2]. Ji YB, et al. Juglone-induced apoptosis in human gastric cancer SGC-7901 cells via the mitochondrial pathway. Exp Toxicol Pathol. 2011 Jan;63(1-2):69-78.
- [3]. Peng X, et al. Juglone prevents metabolic endotoxemia-induced hepatitis and neuroinflammation via suppressing TLR4/NF- $\kappa$ B signaling pathway in high-fat diet rats. Biochem Biophys Res Commun. 2015 Jul 3;462(3):245-50.

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

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