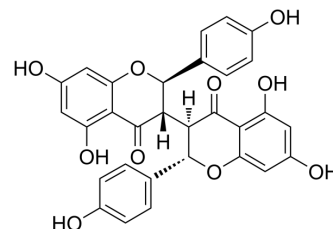


## Isochamaejasmin

Cat. No.:	HY-N3497
CAS No.:	93859-63-3
Molecular Formula:	C <sub>30</sub> H <sub>22</sub> O <sub>10</sub>
Molecular Weight:	542.49
Target:	DNA/RNA Synthesis; NF-κB; Parasite; Apoptosis
Pathway:	Cell Cycle/DNA Damage; NF-κB; Anti-infection; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

Description	Isochamaejasmin is a biflavonoid with anti-cancer, antiparasitic and insecticidal activities. Isochamaejasmin displays a potent NF-κB (NF-κB) activation activity. Isochamaejasmin could cause DNA damage and induce apoptosis via the mitochondrial pathway in AW1 cells <sup>[1][2]</sup> . Isochamaejasmin also has a moderate antiparasitic activity (IC <sub>50</sub> of 7.3 μM for <i>P. falciparum</i> ) and relatively low cytotoxicity (CC <sub>50</sub> of 29.0 μM) <sup>[3]</sup> .										
In Vitro	<p>Isochamaejasmin (6.25-100 μM; 24-72 h) shows potential toxicity against AW1 cells via time- and dose-dependent manners. Isochamaejasmin (1000 mg/L, 500 mg/L, 250 mg/L, 125 mg/L, 62.5 mg/L; 24 h, 48 h, 72 h, and 96 h) has potential toxicity against <i>H. zea</i> larvae via time- and dose-dependent manners<sup>[1]</sup>.</p> <p>Isochamaejasmin (40-80 μM; 24 h) causes DNA damage and increases the levels of γH2AX and OGG1 in AW1 cells. The cell cycle is arrested at the G2/M phase<sup>[1]</sup>.</p> <p>Isochamaejasmin (20-80 μM; 24 h) induces apoptosis of AW1 cells in a dose-dependent manner<sup>[1]</sup>.</p> <p>Isochamaejasmin (20-80 μM; 24 h) shows decline in the MMP, upregulation of Bax/Bcl-2 expression resulting in the release of cytochrome c into the cytosol, activation of caspase-3/9, and cleavage of PARP<sup>[1]</sup>.</p> <p>Isochamaejasmin shows a dose-dependent rise in the reactive oxygen species (ROS) levels, accumulation of a lipid peroxidation product, and inactivation of antioxidant enzymes in AW1 cells<sup>[1]</sup>.</p> <p>Isochamaejasmin induces the expression of a NF-κB-directed reporter gene in transfected HeLa cells with an EC<sub>50</sub> of 3.23 μM. The Isochamaejasmin-stimulated NF-κB reporter activity is accompanied by nuclear translocation of NF-κB proteins and is blocked by a dominant-negative construct of IκBα. Isochamaejasmin also induces time-dependent phosphorylation of the mitogen-activated protein kinases ERK1/2 and p38, and PKCδ<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay<sup>[1]</sup></p> <table border="1"> <tr> <td>Cell Line:</td><td>Larvae and neuronal cells (AW1)</td></tr> <tr> <td>Concentration:</td><td>6.25 μM, 12.5 μM, 25 μM, 50 μM and 100 μM</td></tr> <tr> <td>Incubation Time:</td><td>24 h, 48 h and 72 h</td></tr> <tr> <td>Result:</td><td>Had potential toxicity against <i>H. zea</i> both in vivo and in vitro via time- and dose-dependent manners.</td></tr> </table> <p>Cell Cycle Analysis<sup>[1]</sup></p> <table border="1"> <tr> <td>Cell Line:</td><td>Neuronal cells (AW1)</td></tr> </table>	Cell Line:	Larvae and neuronal cells (AW1)	Concentration:	6.25 μM, 12.5 μM, 25 μM, 50 μM and 100 μM	Incubation Time:	24 h, 48 h and 72 h	Result:	Had potential toxicity against <i>H. zea</i> both in vivo and in vitro via time- and dose-dependent manners.	Cell Line:	Neuronal cells (AW1)
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Concentration:	40 $\mu$ M and 80 $\mu$ M
Incubation Time:	24 h
Result:	The cell cycle was arrested at the G2/M phase.

#### Apoptosis Analysis<sup>[1]</sup>

Cell Line:	Neuronal cells (AW1)
Concentration:	20 $\mu$ M, 40 $\mu$ M, and 80 $\mu$ M
Incubation Time:	24 h
Result:	Induced apoptosis via the mitochondrial pathway in AW1 cells.

#### Western Blot Analysis<sup>[1]</sup>

Cell Line:	Neuronal cells (AW1)
Concentration:	20 $\mu$ M, 40 $\mu$ M, and 80 $\mu$ M
Incubation Time:	24 h
Result:	Showed upregulation of Bax/Bcl-2 expression resulting in the release of cytochrome c into the cytosol, activation of caspase-3/9, and cleavage of PARP.

## REFERENCES

- [1]. Yuanhang Ren, et al. Isochamaejasmin induces toxic effects on *Helicoverpa zea* via DNA damage and mitochondria-associated apoptosis. *Pest Manag Sci*. 2021 Jan;77(1):557-567.
- [2]. Qinghai Tian, et al. Stereospecific induction of nuclear factor-kappaB activation by isochamaejasmin. *Mol Pharmacol*. 2005 Dec;68(6):1534-42.
- [3]. Liene Dhooghe, et al. Antiplasmodial activity of (I-3,II-3)-biflavonoids and other constituents from *Ormocarpum kirkii*. *Phytochemistry*. 2010 May;71(7):785-91.

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

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