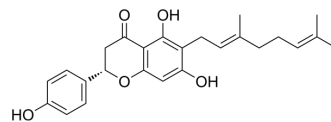


Bonannione A

Cat. No.:	HY-124896
CAS No.:	97126-57-3
Molecular Formula:	C ₂₅ H ₂₈ O ₅
Molecular Weight:	408.49
Target:	Phosphatase; Apoptosis; Autophagy
Pathway:	Metabolic Enzyme/Protease; Apoptosis; Autophagy
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	<p>Bonannione A (6-Geranylaringenin; Mimulone), a prenylflavonoid, is an orally active and potent protein tyrosine phosphatase 1B (PTP1B) inhibitor with an IC₅₀ of 14 μM. Bonannione A triggers caspase-dependent apoptosis. Bonannione A induces autophagy through p53-mediated AMPK/mTOR pathway. Bonannione A shows anti-inflammatory, antiradical and anti-cancer activity^{[1][2][3]}.</p>																
In Vitro	<p>Bonannione A (0-80 μM; 12, 24 hours) significantly inhibits cell proliferation in a dose- and time-dependent way in cancer cell lines^[2].</p> <p>Bonannione A (0-60 μM; 24 hours) triggers caspase-dependent apoptosis in A549 cells. Bonannione A increases accumulation of cells at the apoptotic sub-G1 phase and the number of cells at G2/M phase^[2].</p> <p>Bonannione A (60 μM, 24 h) triggers autophagy without impairment of autophagic flux in A549 cells. Bonannione A remarkably reduced p53 levels^[2].</p> <p>Bonannione A (60 μM, 0-24 h) remarkably decreased the levels of p53 and phospho-mTOR^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Proliferation Assay^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Human lung cancer A549, breast cancer MCF-7, colon cancer HCT116 and osteosarcoma U2OS cells</td> </tr> <tr> <td>Concentration:</td> <td>20, 40, 60, 80 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>12, 24 h</td> </tr> <tr> <td>Result:</td> <td>Significantly inhibited cell proliferation in a dose- and time-dependent way in these cancer cell lines.</td> </tr> </table> <p>Apoptosis Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>A549 cells</td> </tr> <tr> <td>Concentration:</td> <td>0-60 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Annexin V/PI-positive cells were markedly increased in a dose- and time-dependent way. Induced apoptosis through caspase-3 activation and PARP cleavage.</td> </tr> </table>	Cell Line:	Human lung cancer A549, breast cancer MCF-7, colon cancer HCT116 and osteosarcoma U2OS cells	Concentration:	20, 40, 60, 80 μM	Incubation Time:	12, 24 h	Result:	Significantly inhibited cell proliferation in a dose- and time-dependent way in these cancer cell lines.	Cell Line:	A549 cells	Concentration:	0-60 μM	Incubation Time:	24 h	Result:	Annexin V/PI-positive cells were markedly increased in a dose- and time-dependent way. Induced apoptosis through caspase-3 activation and PARP cleavage.
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REFERENCES

[1]. Lai-Bin Zhang, et al. Isoprenylated Flavonoids with PTP1B Inhibition from *Macaranga denticulate*. *Nat Prod Bioprospect*. 2016 Feb;6(1):25-30.

[2]. Hyun-Kyu An, et al. Mimulone-induced autophagy through p53-mediated AMPK/mTOR pathway increases caspase-mediated apoptotic cell death in A549 human lung cancer cells. *PLoS One*. 2014 Dec 9;9(12):e114607.

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

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