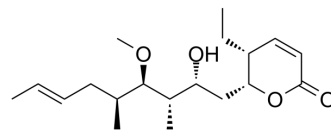


Pironetin

Cat. No.:	HY-116446
CAS No.:	151519-02-7
Molecular Formula:	C ₁₉ H ₃₂ O ₄
Molecular Weight:	324.45
Target:	Microtubule/Tubulin
Pathway:	Cell Cycle/DNA Damage; Cytoskeleton
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Pironetin is an α/β unsaturated lactone isolated from Streptomyces species. Pironetin binds to α -tubulin and is a potent inhibitor of microtubule polymerization, and has cell cycle arrest and antitumor activity ^{[1][2]} .																
IC₅₀ & Target	Microtubule ^[1]																
In Vitro	<p>Pironetin (20-100 ng/mL; 24 hours; 3Y1 cells) treatment arrests the cell cycle progression at G2/M in 3Y1 cells^[1].</p> <p>Pironetin (1-10000 ng/mL; 3 days; HeLa, A2780 and K-NRK cells) treatment inhibits the cell proliferation. IC₅₀ values against these cell lines are almost 10 ng/mL^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Cycle Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>3Y1 cells</td> </tr> <tr> <td>Concentration:</td> <td>20 ng/mL, 50 ng/mL, 100 ng/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>24 hours</td> </tr> <tr> <td>Result:</td> <td>Arrested the cell cycle progression at G2/M in 3Y1 cells.</td> </tr> </table> <p>Cell Proliferation Assay^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>HeLa, A2780 and K-NRK cells</td> </tr> <tr> <td>Concentration:</td> <td>1 ng/mL, 10 ng/mL, 100 ng/mL, 1000 ng/mL and 10000 ng/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>3 days</td> </tr> <tr> <td>Result:</td> <td>Inhibited the cell proliferation.</td> </tr> </table>	Cell Line:	3Y1 cells	Concentration:	20 ng/mL, 50 ng/mL, 100 ng/mL	Incubation Time:	24 hours	Result:	Arrested the cell cycle progression at G2/M in 3Y1 cells.	Cell Line:	HeLa, A2780 and K-NRK cells	Concentration:	1 ng/mL, 10 ng/mL, 100 ng/mL, 1000 ng/mL and 10000 ng/mL	Incubation Time:	3 days	Result:	Inhibited the cell proliferation.
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In Vivo	<p>Pironetin (0.78-6.25 mg/kg; intraperitoneal injection; daily; for 5 days; female CDF1-SLC mice) treatment shows a moderate antitumor effect, however, a severe weight loss is observed as a side effect^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>																

Animal Model:	Female CDF1-SLC mice (10 weeks) injected with P388 murine leukemia cells ^[1]
Dosage:	0.78 mg/kg, 1.56 mg/kg, 3.13 mg/kg, 6.25 mg/kg
Administration:	Intraperitoneal injection; daily; for 5 days
Result:	Showed a moderate antitumor effect.

REFERENCES

[1]. Kondoh M, et al. Cell cycle arrest and antitumor activity of pironetin and its derivatives. *Cancer Lett.* 1998 Apr 10;126(1):29-32.

[2]. Yang J, et al. Pironetin reacts covalently with cysteine-316 of α -tubulin to destabilize microtubule. *J Nat Commun.* 2016 Jun 30;7:12103.

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

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