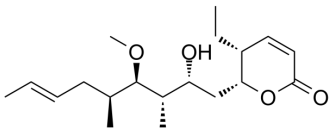
Pironetin

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:	Pure form -20°C 3 years In solvent -80°C 6 months -20°C 1 month



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].
IC_{50} & Target	Microtubule[1]
In Vitro	Pironetin (20-100 ng/mL; 24 hours; 3Y1 cells) treatment arrests the cell cycle progression at G2/M in 3Y1 cells[1]. Pironetin (1-10000 ng/mL; 3 days; HeLa, A2780 and K-NRK cells) treatment inhibits the cell proliferation. IC_{50} values against these cell lines are almost 10 ng/mL[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cycle Analysis[1]

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 in3Y1 cells.

Cell Proliferation Assay[1]

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.

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

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.] Nat Commun. 2016 Jun 30;7:12103.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA