PI3K/Akt/mTOR-IN-2

Cat. No.: HY-146751

CAS No.: 2757804-89-8

Molecular Formula: $C_{17}H_{13}F_2NO$

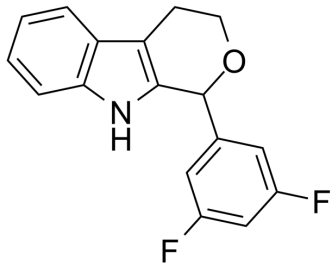
Molecular Weight: 285.29

Target: PI3K; Akt; mTOR; Apoptosis

Pathway: PI3K/Akt/mTOR; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (350.52 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	3.5052 mL	17.5260 mL	35.0521 mL
5 mM	0.7010 mL	3.5052 mL	7.0104 mL
10 mM	0.3505 mL	1.7526 mL	3.5052 mL

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

BIOLOGICAL ACTIVITY

Description

PI3K/Akt/mTOR-IN-2 is a PI3K/AKT/mTOR pathway inhibitor. PI3K/Akt/mTOR-IN-2 possess anti-cancer effects and selectivity against MDA-MB-231 cells with IC_{50} value of 2.29 μM. PI3K/Akt/mTOR-IN-2 can induce cancer cell cycle arrest and apoptosis [1].

IC_{50} & Target

IC_{50}: 2.29 μM (PI3K/AKT/mTOR) in MDA-MB-231[1]

In Vitro

PI3K/Akt/mTOR-IN-2 (compound 23) (0.5 - 100 μM; 72 hours) exhibits effective anti-cancer activity with IC_{50}s of 2.29 - 24.63 μM, of which, IC_{50} in MDA-MB-231 is 2.29 μM[1].

PI3K/Akt/mTOR-IN-2 (1 μM, 2 μM and 4 μM; 24 hours) induces growth inhibition of MDA-MB-231 cells by cell cycle arrest at G0/G1[1].

PI3K/Akt/mTOR-IN-2 (1 μM, 2 μM and 4 μM; 24, 48 and 72 hours) induces apoptosis in MDA-MB-231 cells with both dose- and time-dependent manners[1].

PI3K/Akt/mTOR-IN-2 (1 μM, 2 μM and 4 μM; 48 hours) increases the expression of Bax, and decreases the expression of Bcl-2 in MDA-MB-231 cells[1].

PI3K/Akt/mTOR-IN-2 (1 μM, 2 μM and 4 μM; 24 hours) induces mitochondria-dependent apoptosis in MDA-MB-231 cells through disruption of MMP, accumulation of ROS, depletion of GSH and elevation of intracellular Ca^{2+}[1].

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

Cell Proliferation Assay

Cell Line:	PC3, BGC-823, A549, MCF-7, MDA-MB-231 cells and MCF-10A cells[1]
Concentration:	0.5 - 100 μM
Incubation Time:	72 hours
Result:	Exhibited effective anti-cancer activity with IC_{50}s of 2.29 - 24.63 μM, of which, IC_{50} in MDA-MB-231 was 2.29 μM.

Cell Cycle Analysis

Cell Line:	MDA-MB-231[1]
Concentration:	1 μM, 2 μM and 4 μM
Incubation Time:	24 hours
Result:	Induced growth inhibition of MDA-MB-231 cells by cell cycle arrest at G0/G1.

Apoptosis Analysis

Cell Line:	MDA-MB-231[1]
Concentration:	1 μM, 2 μM and 4 μM
Incubation Time:	24, 48 and 72 hours
Result:	Induced apoptosis in MDA-MB-231 cells with both dose- and time-dependent manners.

Western Blot Analysis

Cell Line:	MDA-MB-231[1]
Concentration:	1 μM, 2 μM and 4 μM
Incubation Time:	48 hours
Result:	Increased the expression of Bax, and decreased the expression of Bcl-2

CUSTOMER VALIDATION

- Research Square Print. January 4th, 2023.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Qin J, Sun X, Ma Y, et al. Design, synthesis and biological evaluation of novel 1,3,4,9-tetrahydropyrano[3,4-b]indoles as potential treatment of triple negative breast cancer by suppressing PI3K/AKT/mTOR pathway [published online ahead of print, 2021 Dec

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

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