Indibulin

Cat. No.: HY-13649

CAS No.: 204205-90-3

Molecular Formula: $C_{22}H_{16}ClN_3O_2$

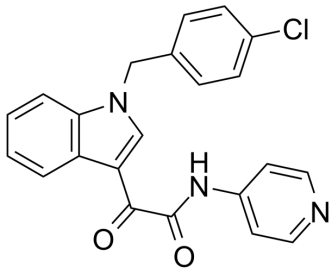
Molecular Weight: 389.83

Target: Microtubule/Tubulin; Apoptosis

Pathway: Cell Cycle/DNA Damage; Cytoskeleton; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (128.26 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5652 mL	12.8261 mL	25.6522 mL
	5 mM	0.5130 mL	2.5652 mL	5.1304 mL
	10 mM	0.2565 mL	1.2826 mL	2.5652 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (5.34 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.34 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Indibulin (ZIO 301), an orally applicable inhibitor of tubulin assembly, shows potent anticancer activity with a minimal neurotoxicity. Indibulin reduces inter-kinetochoric tension, produces aberrant spindles, activates mitotic checkpoint proteins Mad2 and BubR1, and induces mitotic arrest and apoptosis[1].

IC_{50} & Target

Tubulin[1]

In Vitro

Indibulin (300-2100 nM; 48 hours) inhibits the proliferation of MCF-7 cells with an IC50 of 150 nM[1].
Indibulin (300, 600 nM; 48 hours) blocks the cells in the G2/M phase indicating that indibulin blocks the progression of the cell cycle at mitosis[1].
Indibulin (150-600 nM; 24 hours) induces apoptosis in MCF-7 cells[1].

Indibulin (150-600 nM; 48 hours) with 300 and 600 nM generates cleaved fragments of PARP protein the treatment of MCF-7 cells[1].

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

Cell Proliferation Assay[1]

Cell Line:	MCF-7 cells
Concentration:	300, 600, 900, 1200, 1500, 1800, 2100 nM
Incubation Time:	48 hours
Result:	Inhibited the proliferation of MCF-7 cells with an IC_{50} of 150 nM.

Cell Cycle Analysis[1]

Cell Line:	MCF-7 cells
Concentration:	300, 600 nM
Incubation Time:	48 hours
Result:	Blocked the cells in the G2/M phase of the cell cycle.

Apoptosis Analysis[1]

Cell Line:	MCF-7 cells
Concentration:	150, 300 and 600 nM
Incubation Time:	24 hours
Result:	Induced apoptosis in MCF-7 cells.

Western Blot Analysis[1]

Cell Line:	MCF-7 cells
Concentration:	150, 300 and 600 nM
Incubation Time:	48 hours
Result:	Generated cleaved fragments of PARP protein in 300 and 600 nM.

REFERENCES

[1]. Kapoor S, et al. Indibulin dampens microtubule dynamics and produces synergistic antiproliferative effect with vinblastine in MCF-7 cells: Implications in cancer chemotherapy. Sci Rep. 2018 Aug 17;8(1):12363.

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