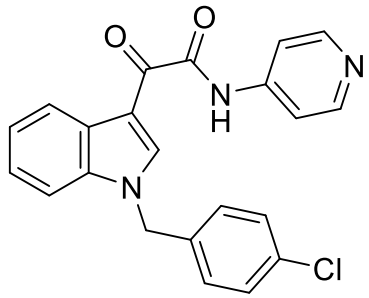
Product data sheet

MedKoo Cat#: 201530 Name: Indibulin CAS: 204205-90-3 Chemical Formula: $C_{22}H_{16}ClN_3O_2$ Exact Mass: 389.0931 Molecular Weight: 389.839	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Indibulin is a synthetic small molecule with antimitotic and potential antineoplastic activities. Indibulin binds to a site on tubulin that is different from taxane- or Vinca alkaloid-binding sites, destabilizing tubulin polymerization and inducing tumor cell cycle arrest and apoptosis. This agent has been shown to be active against multidrug-resistant (MDR) and taxane- resistant tumor cell lines. Check for active clinical trials or closed clinical trials using this agent. (NCI Thesaurus).

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	33.25	85.29

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.57 mL	12.83 mL	25.65 mL
5 mM	0.51 mL	2.57 mL	5.13 mL
10 mM	0.26 mL	1.28 mL	2.57 mL
50 mM	0.05 mL	0.26 mL	0.51 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Kapoor S, Srivastava S, Panda D. 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. doi: 10.1038/s41598-018-30376-y. PMID: 30120268; PMCID: PMC6098095.
2. Yu PF, Chen H, Wang J, He CX, Cao B, Li M, Yang N, Lei ZY, Cheng MS. Design, synthesis and cytotoxicity of novel podophyllotoxin derivatives. Chem Pharm Bull (Tokyo). 2008 Jun;56(6):831-4. doi: 10.1248/cpb.56.831. PMID: 18520089.

In vivo study

TBD

7. Bioactivity
Biological target:

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.

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In vitro activity

Indibulin inhibited the proliferation of MCF-7 cells with a half-maximal inhibitory concentration of 150 ± 13 nM (Fig. 1B). A flow cytometric analysis using propidium iodide staining suggested that indibulin treatment blocked the cells in the G_2/M phase of the cell cycle (Fig. 1C). Furthermore, the percentage of phosphohistone H3 (S10) (a mitotic marker) positive cells increased from 4.1 ± 0.6% in control to 61 ± 5.3% in 600 nM indibulin treated cells indicating that indibulin blocked the progression of the cell cycle at mitosis (Fig. 1D,E).

Reference: Sci Rep. 2018 Aug 17;8(1):12363. https://pubmed.ncbi.nlm.nih.gov/30120268/

In vivo activity

TBD

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.