(-)-Indolactam V

Cat. No.: HY-12307

CAS No.: 90365-57-4

Molecular Formula: $C_{17}H_{23}N_3O_2$

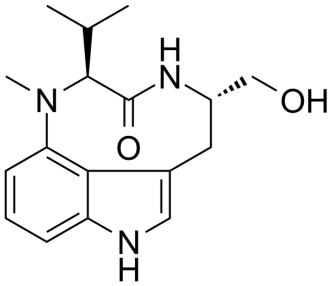
Molecular Weight: 301.38

Target: PKC

Pathway: Epigenetics; TGF-beta/Smad

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 (165.90 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.3181 mL	16.5904 mL	33.1807 mL
	5 mM	0.6636 mL	3.3181 mL	6.6361 mL
	10 mM	0.3318 mL	1.6590 mL	3.3181 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

(-)-Indolactam V is a PKC activator, with K_is of 3.36 nM, 1.03 μM for η-CRD2 (PKCη surrogate peptide), γ-CRD2 (PKCγ surrogate peptide), and K_ds of 5.5 nM (η-C1B), 7.7 nM (ε-C1B), 8.3 nM (δ-C1B), 18.9 nM (β-C1A-long), 20.8 nM (α-C1A-long), 137 nM (β-C1B), 138 nM (γ-C1A), 213 nM (γ-C1B), and has antitumor activity.

IC_{50} & Target

Ki: 3.36 nM (η-CRD2 (PKCη surrogate peptide)), 1.03 μM (γ-CRD2 (PKCγ surrogate peptide))[1]
Kd: 5.5 nM (η-C1B), 7.7 nM (ε-C1B), 8.3 nM (δ-C1B), 18.9 nM (β-C1A-long), 20.8 nM (α-C1A-long), 137 nM (β-C1B), 138 nM (γ-C1A), 213 nM (γ-C1B)[2]

In Vitro	(-)-Indolactam V is a PKC activator, with K_is of 3.36 nM, 1.03 μM for η-CRD2 (PKCη surrogate peptide), γ-CRD2 (PKCγ surrogate peptide), and has antitumor activity[1]. (-)-Indolactam V shows K_ds of 5.5 nM (η-C1B), 7.7 nM (ε-C1B), 8.3 nM (δ-C1B), 18.9 nM (β-C1A-long), 20.8 nM (α-C1A-long), 137 nM (β-C1B), 138 nM (γ-C1A), 213 nM (γ-C1B), respectively[2]. (-)-Indolactam V (20 nM-5 μM) dose-dependently affects multiple hESC lines, such as HUES 2, 4 and 8. (-)-Indolactam V also increases the mRNA levels of Pdx1, HNF6, PTF1A, SOX9, HB9 and PROX1. In addition, (-)-Indolactam V (300 nM) functions in both mouse and human cells and confirms that some signals for pancreatic development[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [3]	For induced differentiation to endocrine or exocrine cells, the (-)-Indolactam V (300 nM)-treated populations are cultured in DMEM/F12 supplemented with 1 N_2, 2 mg/mL albumin fraction V and 10 ng/mL bovine FGF for the first 4 d. 10 mM nicotinamide is then added and maintained for an additional 8 d, changing the medium every 3 d[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Adv Sci (Weinh). 2023 Nov 22:e2304987.
- Viruses. 2020 Jun 3;12(6):609.

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REFERENCES

[1]. Nakagawa Y, et al. Synthesis and biological activities of indolactone-V, the lactone analogue of the tumor promoter (-)-indolactam-V. Biosci Biotechnol Biochem. 1997 Aug;61(8):1415-7.

[2]. Masuda A, et al. Binding selectivity of conformationally restricted analogues of (-)-indolactam-V to the C1 domains of protein kinase C isozymes. Biosci Biotechnol Biochem. 2002 Jul;66(7):1615-7.

[3]. Chen S, et al. A small molecule that directs differentiation of human ESCs into the pancreatic lineage. Nat Chem Biol. 2009 Apr;5(4):258-65.

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