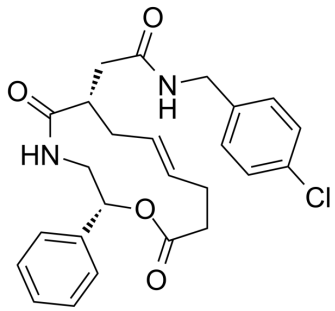
Robotnikinin

Cat. No.:	HY-100515
CAS No.:	1132653-79-2
Molecular Formula:	$C_{25}H_{27}ClN_2O_4$
Molecular Weight:	454.95
Target:	Hedgehog
Pathway:	Stem Cell/Wnt
Storage:	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



BIOLOGICAL ACTIVITY

Description

Robotnikinin is a small molecule capable of binding to and inhibiting the activity of Sonic Hedgehog (Shh) signaling up stream of Smo[1][2].

In Vitro

Robotnikinin demonstrates ShhN-binding capacity at concentrations between 1.56 μM and 25 μM, with a K_D of 3.1 μM derived from kinetic data[2].

Robotnikinin (50 μM) prevents the ShhN-induced LC3-II increase[3].

Robotnikinin (5 μM) downregulates classical NF-κB pathway proteins in H929 and U266 cell lines cocultured with HS-5 cells, suggesting a link between Hh signaling and the NF-κB pathway in MM[4].

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

RT-PCR[4]

Cell Line:	NCI-H929 or U266 cells.
Concentration:	5 μM.
Incubation Time:	48 h.
Result:	Downregulated classical NF-κB pathway proteins in H929 and U266 cell lines cocultured with HS-5 cells.

CUSTOMER VALIDATION

- Neural Regen Res. 2023 Jan 30.
- Neurochem Int. 2024 Jan 4:105674.
- Research Square Print. 2022 May.

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REFERENCES

[1]. Manuel Hitzenberger, et al. The Binding Mode of the Sonic Hedgehog Inhibitor Robotnikinin, a Combined Docking and QM/MM MD Study. Front Chem

[2]. Benjamin Z Stanton, et al. A small molecule that binds Hedgehog and blocks its signaling in human cells. Nat Chem Biol. 2009 Mar;5(3):154-6.

[3]. Ronald S Petralia, et al. Sonic hedgehog promotes autophagy in hippocampal neurons. Biol Open. 2013 Apr 8;2(5):499-504.

[4]. Ke Cai, et al. Targeting the cross-talk between the hedgehog and NF-κB signaling pathways in multiple myeloma. Leuk Lymphoma. 2019 Mar;60(3):772-781.

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