Chroman 1

Cat. No.: HY-15392

CAS No.: 1273579-40-0

Molecular Formula: $C_{24}H_{28}N_4O_4$

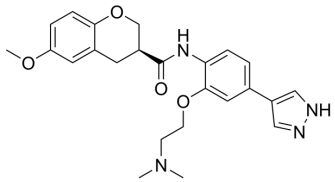
Molecular Weight: 436.5

Target: ROCK

Pathway: Cell Cycle/DNA Damage; Cytoskeleton; Stem Cell/Wnt; TGF-beta/Smad

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (114.55 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.2910 mL	11.4548 mL	22.9095 mL
5 mM	0.4582 mL	2.2910 mL	4.5819 mL
10 mM	0.2291 mL	1.1455 mL	2.2910 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3.25 mg/mL (7.45 mM); Clear solution
2. Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline
   Solubility: 2.5 mg/mL (5.73 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Chroman 1 is a highly potent and selective ROCK inhibitor. Chroman 1 is more potent against ROCK2 (IC_{50}=1 pM) than ROCK1 (IC_{50}=52 pM). Chroman 1 also has inhibitory activity against MRCK, with an IC_{50} of 150 nM[1][2].

IC_{50} & Target

ROCK2	ROCK1	MRCK
1 pM (IC_{50})	52 pM (IC_{50})	150 nM (IC_{50})

In Vitro

Chroman 1 (50 nM, 24 h) inhibits caspase-3/7 activation and reduces apoptosis in human pluripotent stem cells[1].

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

Apoptosis Analysis[1]

Cell Line:	hESCs (human pluripotent stem cells) (WA09)
Concentration:	50 nM
Incubation Time:	0-12 h or 24 h
Result:	Reduced the number of apoptotic cells, reduced caspase-3/7 activation.

Western Blot Analysis[1]

Cell Line:	hESCs (human pluripotent stem cells) (WA09)
Concentration:	50 nM
Incubation Time:	24 h
Result:	Partially inhibited caspase-3 activation.

CUSTOMER VALIDATION

- Nature. 2024 Feb;626(8000):874-880.
- Nat Methods. 2021 May;18(5):528-541.
- Mol Cell. 2023 Jun 24;S1097-2765(23)00430-6.
- Nat Protoc. 2022 Oct 19.
- J Med Virol. 2024 Apr;96(4):e29579.

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REFERENCES

[1]. Yen Ting Chen, et al. Asymmetric synthesis of potent chroman-based Rho kinase (ROCK-II) inhibitors. Med.Chem.Commun., 2011, 2, 73-75.

[2]. Yu Chen, et al. A Versatile Polypharmacology Platform Promotes Cytoprotection and Viability of Human Pluripotent and Differentiated Cells. bioRxiv 815761.

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