Chroman 1 dihydrochloride

Cat. No.: HY-15392A

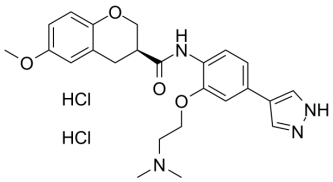
Molecular Formula: $C_{24}H_{30}Cl_2N_4O_4$

Molecular Weight: 509.43

Target: ROCK

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

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (196.30 mM; Need ultrasonic)
DMSO : 100 mg/mL (196.30 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9630 mL	9.8149 mL	19.6298 mL
	5 mM	0.3926 mL	1.9630 mL	3.9260 mL
	10 mM	0.1963 mL	0.9815 mL	1.9630 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: ≥ 1 mg/mL (1.96 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (1.96 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1 mg/mL (1.96 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

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

IC_{50} & Target			
	ROCK2 1 pM (IC_{50})	ROCK1 52 pM (IC_{50})	MRCK 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

- Nat Methods. 2021 May;18(5):528-541.
- Mol Cell. 2023 Jun 24;S1097-2765(23)00430-6.
- Nat Protoc. 2022 Oct 19.
- Cell Rep. 2023 Aug 30;42(9):113046.
- Stem Cell Reports. 2023 Apr 11;18(4):1030-1047.

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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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