

Product Data Sheet

Product Name: SLx-2119

Cat. No.: GC12827

Chemical Properties

Cas. No. 911417-87-3

Chemical Name 2-(3-(4-((1H-indazol-5-yl)amino)quinazolin-2-yl)phenoxy)-N-isopropylacetamide

SMILES O=C(C([H])([H])OC1=C([H])C([H])=C([H])C(C2=NC3=C([H])C([H])=C([H])C([H])=C3C(N([H])C(C([H])=C4[H])=C([H])C5=C4N([H])N=C5[H])=N2)=C1[H])N([H])C(C([H])([H])[H])([H])C([H])([H])[H])

Formula C₂₆H₂₄N₆O₂ M.Wt 452.51

Solubility ≥ 22.65 mg/mL in DMSO, ≥ 26.4 mg/mL in EtOH with ultrasonic and warming Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

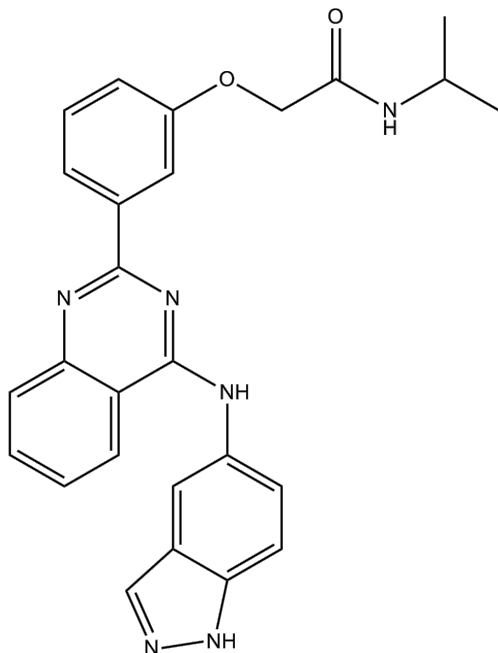
Caution: Product has not been fully validated for medical applications. For research use only.

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Structure



Protocol

Cell experiment [1]:

Cell lines Human adipose-derived stem cells (hADSCs)

The hADSCs were cultured in MesenPro RS medium, which was supplemented with 100units/ml penicillin and 100µg/ml streptomycin. The medium was placed in a humidified incubator at 37°C and 5% CO₂. To differentiate into adipocytes, the cells were cultured for 2 days after confluence, and then the medium was replaced with StemPro adipocyte differentiation medium. During the specific culture period, the medium was changed every 3 days. During the entire experiment, the cells were treated with different concentrations (0.3, 0.5, 1, and 3µM) of SLx-2119, and stained with Oil Red O method on the 15th day.

Reaction 0.3, 0.5, 1, and 3µM; 15 days
Conditions

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Applications SLx-2119 significantly dose-dependently inhibited the lipid accumulation in hADSCs.

Animal experiment [2]:

Animal models Male Sprague-Dawley rats

Preparation Method Male Sprague-Dawley rats (4 weeks old, 100-120g) were given a single subcutaneous injection of the vector (DMSO) or monocrotaline (MCT) (60mg/kg) on day 1. From day 8 to day 21, the rats were intraperitoneally injected with the vector (normal saline) or SLx-2119 (1mg/kg/day). On day 21, the rats were intraperitoneally injected with ketamine (100mg/kg) and sevoflurane (26mg/kg) for anesthesia, and the right ventricular pressure was measured.

Dosage form 1 mg/kg/day for 14 days; i.p.

Applications SLx-2119 treatment attenuated right ventricular systolic pressure (RVSP) in rats with pulmonary hypertension (PH) caused by MCT.

References:

[1] Diep D T V, Duong K H M, Choi H, et al. KD025 (SLx-2119) suppresses adipogenesis at intermediate stage in human adipose-derived stem cells[J]. Adipocyte, 2019, 8(1): 114-124.

[2] Yamamura A, Nayeem M J, Sato M. The Rho kinase 2 (ROCK2)-specific inhibitor KD025 ameliorates the development of pulmonary arterial hypertension[J]. Biochemical and Biophysical Research Communications, 2021, 534: 795-801.

Background

SLx-2119 potent inhibits activity of Rho kinase (ROCK) 2, with an IC₅₀ value of 105nM [1]. SLx-2119 binds to ROCK2 and suppresses aberrant pro-fibrotic signalling via downregulation of pro-fibrotic gene transcription, stress fiber formation, myofibroblast activation and collagen deposition[2]. SLx-2119 has been widely used in animal models to inhibit inflammatory responses[3].

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In vitro, SLx-2119 treatment for 24 hours significantly inhibited the growth of human prostate epithelial cells (PrECs) and prostate cancer PC-3 cells, with IC₅₀ values of 2028nM and 422nM, respectively^[4]. Treatment with 3μM SLx-2119 for 24 days significantly inhibited the adipocyte differentiation of human adipose-derived stem cells (hADSCs) and downregulated the protein and mRNA expressions of various adipogenesis-related and adipogenesis markers, including PPARγ, C/EBPα, SREBP-1c, Glut4 and FABP4^[5]. Treatment of CD4⁺ T cells with 10μM SLx-2119 for 1 hour significantly reduced the intracellular levels of IL-17 and IL-21, and inhibited the phosphorylation of STAT3^[6].

In vivo, SLx-2119 treatment via oral administration at a dose of 100mg/kg/day for 1 weeks significantly inhibited the liver fibrosis induced by thiocarbamide (TAA) in C57BL/6 mice ^[7]. Continuous intraperitoneal injection of SLx-2119 (50mg/kg/day) for 28 consecutive days can reduce the body weight of obese mice induced by high-fat diet, improve lipid metabolism, and decrease the mass of white adipose tissue^[8].

References:

- [1] Boerma M, Fu Q, Wang J, et al. Comparative gene expression profiling in three primary human cell lines after treatment with a novel inhibitor of Rho kinase or atorvastatin[J]. Blood coagulation & fibrinolysis, 2008, 19(7): 709-718.
- [2] Blair H A. Belumosudil: first approval[J]. Drugs, 2021, 81(14): 1677-1682.
- [3] Yoon J H, Nguyen T T L, Duong V A, et al. Determination of KD025 (SLx-2119), a selective ROCK2 inhibitor, in rat plasma by high-performance liquid chromatography-tandem mass spectrometry and its pharmacokinetic application[J]. Molecules, 2020, 25(6): 1369.
- [4] Hossain A, Yamamura A, Nayeem M J, et al. Rho kinase 2 promotes epithelial-mesenchymal transition and proliferation in human prostate cancer PC-3 cells[J]. Journal of Pharmacological Sciences, 2025.
- [5] Diep D T V, Duong K H M, Choi H, et al. KD025 (SLx-2119) suppresses adipogenesis at intermediate stage in human adipose-derived stem cells[J]. Adipocyte, 2019, 8(1): 114-124.
- [6] Zanin-Zhorov A, Weiss J M, Nyuydzefe M S, et al. Selective oral ROCK2 inhibitor down-regulates IL-21 and IL-17 secretion in human T cells via STAT3-dependent mechanism[J]. Proceedings of the National Academy of Sciences, 2014, 111(47): 16814-16819.
- [7] Nalkurthi C, Schroder W A, Melino M, et al. ROCK2 inhibition attenuates profibrogenic immune cell function to reverse thioacetamide-induced liver fibrosis[J]. JHEP Reports, 2022, 4(1): 100386.

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[8] Tran N N Q, Choi H, Sactivel B, et al. The dual targeting effects of KD025 on casein kinase 2 and ROCK2 in a mouse model of diet-induced obesity[J]. Biochemical Pharmacology, 2025, 237: 116933.

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