RCM-1

Cat. No.: HY-19979

CAS No.: 339163-65-4

Molecular Formula: $C_{20}H_{12}N_2OS_4$

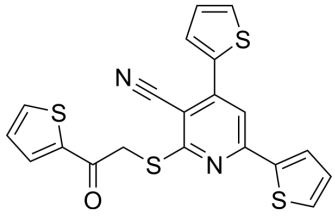
Molecular Weight: 424.58

Target: DNA/RNA Synthesis

Pathway: Cell Cycle/DNA Damage

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 : 16.67 mg/mL (39.26 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3553 mL	11.7763 mL	23.5527 mL
	5 mM	0.4711 mL	2.3553 mL	4.7105 mL
	10 mM	0.2355 mL	1.1776 mL	2.3553 mL

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

BIOLOGICAL ACTIVITY

Description

RCM-1 is a forkhead box M1 (FOXM1) inhibitor with an EC_{50} of 0.72 μM in U2OS cells. RCM-1 blocks the nuclear localization and increased the proteasomal degradation of FOXM1. RCM-1 can be used for asthma and other chronic airway diseases research[1].

IC_{50} & Target

FOXM1[1].

In Vitro

RCM-1 blocks the nuclear localization and increased the proteasomal degradation of FOXM1, a transcription factor critical for the differentiation of goblet cells from airway progenitor cells. In cultured airway epithelial cells, RCM-1 reduces IL-13 and STAT6 signaling and prevented the expression of the STAT6 target genes Spdef and Foxa3, which are key transcriptional regulators of goblet cell differentiation[1].

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

In Vivo

RCM-1 reduces airway resistance, increased lung compliance, and decreased proinflammatory cytokine production in mice exposed to the house dust mite and interleukin-13 (IL-13), which triggers goblet cell metaplasia. In mice, RCM-1 reduces IL-13 and STAT6 signaling and prevented the expression of the STAT6 target genes Spdef and Foxa3[1].

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

PROTOCOL

Cell Assay [1]	Rd76-9 rhabdomyosarcoma, B16-FlO melanoma, H2122 lung adenocarcinoma, 4T1 breast carcinoma, MyC-CaP prostate carcinoma and KPC-2 pancreatic carcinoma cells are seeded in 6-well plates and incubated overnight. The cells are treated with 20 μM concentration of RCM-1 for 24, 48 and 72 h and cell growth is analyzed by counting alive cells using trypan blue. Cells treated with DMSO are used as controls[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice[1] Mouse Rd76-9 rhabdomyosarcoma cells (1×10^6 cells) are injected intramuscularly in the flanks of C56Bl/6J mice (n=8 mice per group). Seven days after the tumor cells inoculation, 40 μL of either Vehicle (DMSO) or RCM-1 (20 mg/kg body weight) are injected intraperitoneally in the animals every other day. The animals are sacrificed and tumors are harvested on day 16. RCM-1 treatment decreases Rd76-9 tumor growth as compared to the DMSO-treated group. Mouse B 16-FlO melanoma cells (1×10^6 cells) are injected subcutaneously in C56Bl/6J mice (n=7 animals per group). Three days after the tumor cell inoculation, 40 μL of either Vehicle (DMSO) or RCM1 (20 mg/Kg body weight) are injected intraperitoneally in the animals every other day. The animals are sacrificed and tumors are harvested on day 12[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Death Discov. 2022 Aug 9;8(1):354.
- Cell Signal. 2024 Oct 9:111467.
- Acta Biochim Biophys Sin (Shanghai). 2024 Apr 25;56(4):621-633.

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REFERENCES

[1]. Lifeng Sun, et al. The FOXM1 inhibitor RCM-1 suppresses goblet cell metaplasia and prevents IL-13 and STAT6 signaling in allergen-exposed mice. Sci Signal. 2017 Apr 18;10(475):eaai8583.

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