

Product Data Sheet

Product Name: SGC707
Cat. No.: GC12874

Chemical Properties

Cas. No. 1687736-54-4

Chemical Name 1-(isoquinolin-6-yl)-3-(2-oxo-2-(pyrrolidin-1-yl)ethyl)urea

SMILES O=C(NCC(N1CCCC1)=O)NC2=CC3=CC=NC=C3C=C2

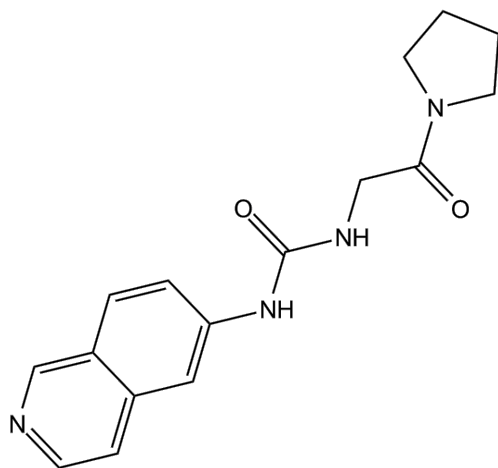
Formula $C_{16}H_{18}N_4O_2$ M.Wt 298.34

Solubility $\geq 29.8\text{mg/mL}$ in DMSO 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.

Structure



Protocol

Cell experiment [1]:

Cell lines Glioblastoma cell line (U251, U87 and A172)

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

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The U251, U87 and A172 were cultured in DMEM medium with 10% fetal Preparation Method bovine serum (FBS) and 1% penicillin/streptomycin. The cells were treated with SGC707 (10 μ M) for 48-96 hours.

Reaction
Conditions 10 μ M; 48-96 hours

Applications Pharmacological inhibition of PRMT3 with SGC707 impaired the growth of GBM cells and abolished glycolysis.

Animal experiment [2]:

Animal models C57BL/6 mice (six-week-old female and eight-week-old male)

Preparation Method A mouse model of endometriosis was established. One month after establishing the endometriosis model, the mice with endometriosis were divided into an experimental group and a control group, and a decidualization model was established. The experimental group mice were intraperitoneally injected with SGC707 (30mg/kg) for 5 days.

Dosage form 30mg/kg; i.p.; five times

Applications SGC707 inhibited the occurrence of endometriosis, promoted deciduoma formation, and improved embryonic development.

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References:

- [1] Liao Y, Luo Z, Lin Y, et al. PRMT3 drives glioblastoma progression by enhancing HIF1A and glycolytic metabolism. Cell Death Dis. 2022 Nov 9;13(11):943.
- [2] Sun F, Chen Y, Li Y, et al. PRMT3-mediated FOXO1 arginine methylation exacerbates oxidative stress-induced decidualization defects in the eutopic endometrium of endometriosis. Cell Mol Life Sci. 2025 Dec 27;83(1):45.

Background

SGC707 is a selective allosteric inhibitor of protein arginine methyltransferase 3 (PRMT3) ($IC_{50}=31\text{nM}$, $K_d=53\text{nM}$). SGC707 can be used in research related to cancers (such as glioblastoma, hepatocellular carcinoma), metabolic diseases (such as non-alcoholic fatty liver disease, atherosclerosis), and antiarrhythmic effects^[1-4].

In vitro, SGC707 (10 μM) was used to treat RS4;11 acute leukemia cells for 48 hours. SGC707 had no effect on cell growth and showed minimal downregulation of ADMA (asymmetric dimethylarginine) levels^[5]. SGC707 (10 μM) was used to treat glioblastoma cells (U251, U87, A172) for 48-96 hours. SGC707 impaired cell growth and abolished glycolysis in cancer cells^[6].

In vivo, SGC707 (30mg/kg; once daily) was intraperitoneally injected into a mouse model of endometriosis for 5 consecutive days. SGC707 inhibited the occurrence of endometriosis, promoted deciduoma formation, and improved embryonic development^[7]. SGC707 (10mg/kg; three times per week) was intraperitoneally injected into apoE knockout mice for 6 consecutive weeks. SGC707 alleviated hepatic steatosis, reduced weight gain, and altered white adipose tissue morphology^[8].

References:

- [1] Kaniskan HÜ, Szewczyk MM, Yu Z, et al. A potent, selective and cell-active allosteric inhibitor of protein arginine methyltransferase 3 (PRMT3). Angew Chem Int Ed Engl. 2015 Apr 20;54(17):5166-70.
- [2] de Jong LM, Zhang Z, den Hartog Y, et al. PRMT3 inhibitor SGC707 reduces triglyceride levels and induces pruritus in Western-type diet-fed LDL receptor knockout mice. Sci Rep. 2022 Jan 10;12(1):483.
- [3] Wang Y, Wang C, Guan X, et al. PRMT3-Mediated Arginine Methylation of METTL14 Promotes

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Malignant Progression and Treatment Resistance in Endometrial Carcinoma. Adv Sci (Weinh). 2023 Dec;10(36):e2303812.

[4] Zhang X, Hao Y, Han D, et al. PRMT3-Mediated Arginine Methylation Stabilizes PCSK9 to Promote Aortic Valve Calcification. Circulation. 2026 Mar 9.

[5] Zou W, Li M, Wan S, et al. Discovery of PRMT3 Degradar for the Treatment of Acute Leukemia. Adv Sci (Weinh). 2024 Oct;11(38):e2405963.

[6] Liao Y, Luo Z, Lin Y, et al. PRMT3 drives glioblastoma progression by enhancing HIF1A and glycolytic metabolism. Cell Death Dis. 2022 Nov 9;13(11):943.

[7] Sun F, Chen Y, Li Y, et al. PRMT3-mediated FOXO1 arginine methylation exacerbates oxidative stress-induced decidualization defects in the eutopic endometrium of endometriosis. Cell Mol Life Sci. 2025 Dec 27;83(1):45.

[8] Hoekstra M, Nahon JE, de Jong LM, et al. Inhibition of PRMT3 activity reduces hepatic steatosis without altering atherosclerosis susceptibility in apoE knockout mice. Biochim Biophys Acta Mol Basis Dis. 2019 Jun 1;1865(6):1402-1409.

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