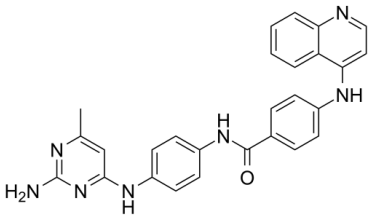
Data Sheet

Product Name:	SGI-1027
Cat. No.:	CS-2735
CAS No.:	1020149-73-8
Molecular Formula:	C27H23N7O
Molecular Weight:	461.52
Target:	Apoptosis; DNA Methyltransferase
Pathway:	Apoptosis; Epigenetics
Solubility:	DMSO : 27 mg/mL (58.50 mM; Need ultrasonic and warming); H2O : < 0.1 mg/mL (insoluble)



BIOLOGICAL ACTIVITY:

SGI-1027 is a **DNA methyltransferase (DNMT)** inhibitor, with **IC_{50}**s of 7.5 μM, 8 μM, and 12.5 μM for DNMT3B, DNMT3A, and DNMT1 with poly(dI-dC) as substrate. IC50 & Target: IC50: 7.5 μM (DNMT3B), 8 μM (DNMT3A), 12.5 μM (DNMT1)[1] **In Vitro:** SGI-1027 is a DNMT inhibitor, with IC_{50}s of 7.5 μM, 8 μM, and 12.5 μM for DNMT3B, DNMT3A, and DNMT1 with poly(dI-dC) as substrate. SGI-1027 shows an IC_{50} of 6 μM for DNMT1 (hemimethylated DNA). SGI-1027 (1, 2.5, or 5 μM) causes selective degradation of DNMT1 in several human cancer cell lines, but shows little or no cytotoxic effect on rat hepatoma cells, and does not induce apoptosis in rat hepatoma cells[1]. SGI-1027 shows an EC_{50} of 0.9 μM for hDNMT3A, and causes cytotoxicity on KG-1 cells, with an EC_{50} of 4.4 μM[2].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase Assay: [1]To determine the nature of inhibition of **DNMTase activity by SGI-1027**, DNMT1 enzyme activity is measured in presence of a fixed concentration of **SGI-1027 (0, 2.5, 5, and 10 μM)** while one of the two (Ado-Met or DNA) is varied in a particular reaction mixture. At a fixed concentration of DNA (500 ng) varying concentrations of Ado-Met used are from 25-500 nM, respectively. Similarly, final DNA concentrations are varied from (25-500 ng) at 75 nM Ado-Met[1].

Cell Assay: SGI-1027 is dissolved in DMSO[1].[1]**Rat hepatoma H4IIE cells** are grown in DMEM supplemented with fetal bovine serum (10%) and calf serum (10%). Cells are seeded into 96-well plates and after **48 h** exposed to **SGI-1027** at concentrations ranging from **0 to 300 μM**. The solubility is determined by Nephalometry techniques immediately after dosing and before harvesting the cells at 24 h. Following the exposure period, the cells or their supernatant (culture medium) are analyzed for changes in cell proliferation (propidium iodide), membrane leakage (α-GST), mitochondrial function [3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide and cellular ATP], oxidative stress (intracellular GSH and 8-isoprostane), and apoptosis (caspase-3). The half-maximal toxic concentration (TC_{50}) is determined from the dose-response curves[1].

References:

[1]. Datta J, et al. A new class of quinoline-based DNA hypomethylating agents reactivates tumor suppressor genes by blocking DNA methyltransferase 1 activity and inducing its degradation. Cancer Res. 2009 May 15;69(10):4277-85.

[2]. Rilova E, et al. Design, synthesis and biological evaluation of 4-amino-N- (4-aminophenyl)benzamide analogues of quinoline-based SGI-1027 as inhibitors of DNA methylation. ChemMedChem. 2014 Mar;9(3):590-601.

CAIndexNames:

Benzamide, N-[4-[(2-amino-6-methyl-4-pyrimidinyl)amino]phenyl]-4-(4-quinolinylamino)-

SMILES:

O=C(NC1=CC=C(NC2=NC(N)=NC(C)=C2)C=C1)C3=CC=C(NC4=CC=NC5=CC=CC=C45)C=C3

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

Tel: 732-484-9848 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA