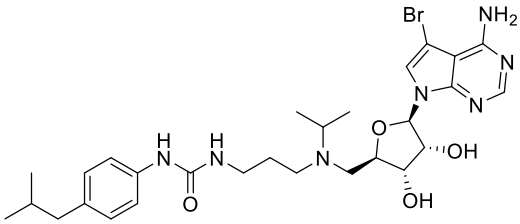
Product data sheet

MedKoo Cat#: 407107 Name: SGC-0946 CAS#: 1561178-17-3 Chemical Formula: $C_{28}H_{40}BrN_7O_4$ Exact Mass: 617.23252 Molecular Weight: 618.58	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
SGC-0946 is a potent and selective inhibitor of DOT1L, which potently and selectively kills cells containing an MLL translocation. SGC-0946 inhibits DOT1L with an IC50 of 0.3nM in a radioactive enzyme assay and is over 100-fold selective for other HMTs. In addition, SGC-0946 potently reduces H3K79 dimethylation with cellular IC50 of 2.6nM in A431 cells, and 8.8nM in MCF10A cells.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	55.47	89.67
DMF	10.0	16.17
Ethanol	57.29	92.61
Ethanol:PBS (pH 7.2) (1:4)	0.2	0.32

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	1.62 mL	8.08 mL	16.17 mL
5 mM	0.32 mL	1.62 mL	3.23 mL
10 mM	0.16 mL	0.81 mL	1.62 mL
50 mM	0.03 mL	0.16 mL	0.32 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Wong M, Tee AEL, Milazzo G, Bell JL, Poulos RC, Atmadibrata B, Sun Y, Jing D, Ho N, Ling D, Liu PY, Zhang XD, Hüttelmaier S, Wong JWH, Wang J, Polly P, Perini G, Scarlett CJ, Liu T. The Histone Methyltransferase DOT1L Promotes Neuroblastoma by Regulating Gene Transcription. Cancer Res. 2017 May 1;77(9):2522-2533. doi: 10.1158/0008-5472.CAN-16-1663. Epub 2017 Feb 16. PMID: 28209620.
2. Yu W, Chory EJ, Wernimont AK, Tempel W, Scopton A, Federation A, Marineau JJ, Qi J, Barsyte-Lovejoy D, Yi J, Marcellus R, Iacob RE, Engen JR, Griffin C, Aman A, Wienholds E, Li F, Pineda J, Estiu G, Shatseva T, Hajian T, Al-Awar R, Dick JE, Vedadi M, Brown PJ, Arrowsmith CH, Bradner JE, Schapira M. Catalytic site remodelling of the DOT1L methyltransferase by selective inhibitors. Nat Commun. 2012;3:1288. doi: 10.1038/ncomms2304. Erratum in: Nat Commun. 2013;4:1893. PMID: 23250418.

Product data sheet

In vivo study

1. Chava S, Bugide S, Edwards YJK, Gupta R. Disruptor of telomeric silencing 1-like promotes ovarian cancer tumor growth by stimulating pro-tumorigenic metabolic pathways and blocking apoptosis. Oncogenesis. 2021 Jul 12;10(7):48. doi: 10.1038/s41389-021-00339-6. PMID: 34253709; PMCID: PMC8275629.
2. Gobl J, Kumar Sinha D, Sima R, Perner J, Kopáček P, Valdés JJ, Rego ROM, Cabezas-Cruz A. Histone Methyltransferase DOT1L is Involved in Larval Molting and Second Stage Nymphal Feeding in Ornithodoros Moubata. Vaccines (Basel). 2020 Apr 1;8(2):157. doi: 10.3390/vaccines8020157. PMID: 32244625; PMCID: PMC7349889.

7. Bioactivity

Biological target:

SGC-0946 is a highly potent and selective DOT1L methyltransferase inhibitor with IC50 of 0.3 nM.

In vitro activity

SGC-0946 treatment led to reduction in H3K79me2 72 hours posttreatment and more significantly 7 days post-treatment. SGC-0946 reduced the expression of the DOT1L and N-Myc target gene E2F2 and dose-dependently reduced BE(2)-C and Kelly cells' proliferation. In contrast, treatment with SGC-0946 did not reduce E2F2 gene expression and did not have an effect on cell proliferation in MYCN gene nonamplified NBL-S and SK-N-FI neuroblastoma cells.

Reference: Cancer Res. 2017 May 1;77(9):2522-2533. https://pubmed.ncbi.nlm.nih.gov/28209620/

In vivo activity

O. moubata, a type of tick, larvae exposed to SGC-0946 displayed high mortality during molting to first-stage nymphs. However artificial blood feeding supplemented with SGC-0946 did not affect survival and reproductive performance of adult female ticks.

Reference: Vaccines (Basel). 2020 Apr 1;8(2):157. https://pubmed.ncbi.nlm.nih.gov/32244625/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.