Guadecitabine

Cat. No.: HY-13542

CAS No.: 929901-49-5

Molecular Formula: $C_{18}H_{24}N_9O_{10}P$

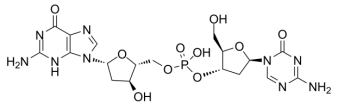
Molecular Weight: 557.41

Target: DNA Methyltransferase

Pathway: Epigenetics

Storage: Powder -20°C 3 years

* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro	H_2O

BIOLOGICAL ACTIVITY

Description	Guadecitabine (SGI-110) is a second-generation DNA methyltransferases (DNMT) inhibitor for research of acute myeloid leukemia (AML) and myelodysplastic syndromes (MDS)[1].
IC_{50} & Target	DNA Methyltransferase
In Vitro	Exposure to Guadecitabine induces the expression of investigated cancer/testis antigens (CTA) in CTA-negative cancer cells. Results show that Guadecitabine induces and/or strongly up-regulates the constitutive levels of MAGE-A3- and NY-ESO-1-specific mRNA expression in neoplastic cells of all histotypes investigated. Exposure to Guadecitabine significantly ($p<0.05$) up-regulates the constitutive levels of expression of HLA class I antigens, HLA-A2 allospecificity, and of the co-stimulatory molecule ICAM-1, on Mel 275 melanoma cells. Results show that treatment with Guadecitabine induces a significant ($p<0.01$) reduction in the constitutive methylation levels of CTA promoters in investigated cancer cells. Mean values of the percentage of demethylation induced by Guadecitabine in MAGE-A1 and NY-ESO-1 promoters are 57 and 30 %, in Mel 195, and 22 and 33 % in MZ-1257 RCC cells, respectively[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Guadecitabine (S110) is effective at retarding tumor growth. While the tumors do not shrink in size with Guadecitabine treatment, they experience very minimal growth while the tumors treated with PBS only show substantial growth. In addition, Guadecitabine induces much less toxicity as determined by mouse weight changes when given subcutaneously (SQ) compare to that with IP injections[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	Cells (3 to 4×10^5) are seeded in a T75 tissue culture flask and treated 24 h later with Guadecitabine , by replacing the medium with fresh one containing 1 μM or 10 μM of Guadecitabine, every 12 h for 2 days (4 pulses) and then with fresh

	medium without drugs for additional 2 days. Control cultures are treated under similar experimental conditions in the absence of drug[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [3]	Athymic nu/nu mice are inoculated subcutaneously (SQ) in the right hind flank with 10^7 EJ6 bladder cancer cells. After tumors reach 0.5 cm in diameter, animals are stratified into three groups with eight animals per group to begin treatments. Doses and dosing schedules are designed so that each group receives molar equivalents of Guadecitabine (S110). The agent is administered SQ once weekly at a dose of 12.2 mg/kg for Guadecitabine for three weeks. The study includes an appropriate PBS control group. Tumor sizes by caliper and body weight measurements are taken twice weekly to monitor tumor growth inhibition and tolerability[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cancer Res. 2020 Jul 15;80(14):3046-3056.
- Neoplasia. 2020 May 25;22(7):274-282.
- Epigenomes. 2021, 5(4), 27.
- University of Siena. Department of Medical Biotechnologies. 2021 May.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Foulks JM, et al. Epigenetic drug discovery: targeting DNA methyltransferases. J Biomol Screen. 2012 Jan;17(1):2-17.

[2]. Coral S, et al. Immunomodulatory activity of SGI-110, a 5-aza-2'-deoxycytidine-containing demethylating dinucleotide. Cancer Immunol Immunother. 2013 Mar;62(3):605-14.

[3]. Chuang JC, et al. S110, a 5-Aza-2'-deoxycytidine-containing dinucleotide, is an effective DNA methylation inhibitor in vivo and can reduce tumor growth. Mol Cancer Ther. 2010 May;9(5):1443-50.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

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