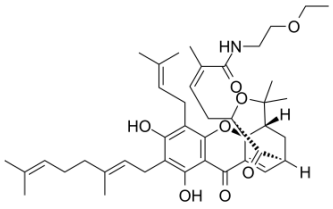
GNA002

Cat. No.:	HY-101508
CAS No.:	1385035-79-9
Molecular Formula:	$C_{42}H_{55}NO_8$
Molecular Weight:	701.89
Target:	Histone Methyltransferase
Pathway:	Epigenetics
Storage:	Please store the product under the recommended conditions in the COA.



BIOLOGICAL ACTIVITY

Description	GNA002 is a highly potent, specific and covalent **EZH2** (Enhancer of zeste homolog 2) inhibitor with an **IC_{50}** of 1.1 μM. GNA002 can specifically and covalently bind to Cys668 within the EZH2-SET domain, triggering EZH2 degradation through COOH terminus of Hsp70-interacting protein (CHIP)-mediated ubiquitination. GNA002 efficiently reduces EZH2-mediated H3K27 trimethylation, reactivates polycomb repressor complex 2 (PRC2)-silenced tumor suppressor genes[1].
IC_{50} & Target	EZH2 1.1 μM (IC_{50})

In Vitro

GNA002 (10 μM; 72 hours) clearly inhibits the proliferation of numerous cancer cell lines with IC_{50}s of 0.070 μM and 0.103 μM for MV4-11 and RS4-11[1].

GNA002 (2 μM; 24 hours) demonstrates an elevated capacity to induce cell death in human cancer cells[1].

GNA002 (0.1-4 μM; 48 hours) efficiently reduces EZH2-mediated H3K27 trimethylation in Cal-27 head and neck cancer cells[1].

Cell Proliferation Assay[1]

Cell Line:	Numerous cancer cell lines
Concentration:	10 μM
Incubation Time:	72 hours
Result:	Inhibited the proliferation of numerous cancer cell lines with IC50s of 0.070 μM and 0.103 μM for MV4-11 and RS4-11.

Apoptosis Analysis[1]

Cell Line:	HN-4 and Cal-27 head and neck cancer cells
Concentration:	2 μM
Incubation Time:	24 hours
Result:	Induced cellular apoptosis in human cancer cells.

Western Blot Analysis[1]	
Cell Line:	Cal-27 head and neck cancer cells
Concentration:	0.1, 0.2, 0.5, 1, 2, 4 μM
Incubation Time:	48 hours
Result:	Reduced H3K27Me3 levels.

In Vivo

GNA002 (oral administration; 100 mg/kg; daily) significantly decreases the volumes of Cal-27-derived tumors and reduces H3K27Me3 levels in tumor tissues. GNA002 also significantly suppresses the in vivo tumor growth derived from the xenografted A549 lung cancer cells, Daudi and Pfeiffer cells. GNA002 inhibits the aberrant oncogenic functions of EZH2, thus inhibiting tumor growth in vivo, at least in the xenograft experimental model[1].

Animal Model:	Male BALB/C Nude mice aged 30-35 days and weighing 18-22 g, bearing Cal-27 xenograft tumors[1]
Dosage:	100 mg/kg
Administration:	Oral administration; daily
Result:	Decreased the size and weight of tumors formed by Cal-27 cells.

REFERENCES

[1]. Wang X, et al. A covalently bound inhibitor triggers EZH2 degradation through CHIP-mediated ubiquitination. EMBO J. 2017 May, 36(9):1243-1260.

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