Product Data Sheet

Product Name: FEN1-IN-SC13
Cat. No.: GC63981

Chemical Properties

Cas. No.	2098776-03-3		
Formula	C24H23N3O3S	M.Wt	433.52
Solubility	DMSO : 62.5 mg/mL (144.17 mM; ultrasonic and warming and heat to 60°C)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	FEN1-IN-SC13		

Protocol

Cell experiment [1]:

Cell lines	TC-YIK cells (human small cell neuroendocrine carcinoma of the cervix cell line)
Preparation Method	TC-YIK cells were maintained in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% fetal bovine serum (FBS) and 1% penicillin/streptomycin at 37°C, 5% CO_2. TC-YIK cells were treated with FEN1-IN-SC13 at 40μM for 24–72 hours.
Reaction Conditions	40μM; 24-72h

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Applications	FEN1-IN-SC13 significantly suppressed cell viability at 72 hours and reduced colony formation. FEN1-IN-SC13 induced apoptosis increase in apoptotic rate and caused G2/M phase cell cycle arrest. FEN1-IN-SC13 downregulated FEN1, PCNA, BCL-2, and PIK3CA expression while upregulating Caspase-9, confirming dual inhibition of DNA replication and promotion of mitochondrial apoptosis.

Animal experiment [2]:

Animal models	Female nude mice (BALB/c background)
Preparation Method	Mice were subcutaneously inoculated with HeLa cells (2×10^6 cells/mouse). After tumor establishment (~80-100mm^3), mice were intraperitoneally administered FEN1-IN-SC13 (200μg/mouse) daily for 5 consecutive days, with local ionizing radiation (IR; 10Gy) applied on the third day. Tumor volume and body weight were monitored every 6 days for 30 days.
Dosage form	200μg/mouse; i.p.; Daily for 5 days
Applications	FEN1-IN-SC13 combined with IR significantly suppressed tumor growth and enhanced radiotherapy sensitivity without inducing systemic toxicity.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

References:
[1] Bai Q, Wang X, Yan H, et al. Microglia-Derived Spp1 Promotes Pathological Retinal Neovascularization via Activating Endothelial Kit/Akt/mTOR Signaling. J Pers Med. 2023 Jan 11;13(1):146.
[2] Liu C, Zhang W, Wang J, et al. Tumor-associated macrophage-derived transforming growth factor-β promotes colorectal cancer progression through HIF1-TRIB3 signaling. Cancer Sci. 2021 Oct;112(10):4198-4207.

Background

FEN1-IN-SC13 is a small molecule inhibitor specifically targeting flap structure-specific endonuclease 1 (FEN1)[1]. FEN1-IN-SC13 demonstrates significant potential in the field of antitumor drug development[2].

In vitro, treatment of TC-YIK cells (a small cell neuroendocrine carcinoma of the cervix cell line) with 40μM FEN1-IN-SC13 for 48–72 hours significantly inhibited tumor cell proliferation and colony formation, and induced apoptosis and G2/M phase arrest[3]. Pre-treatment of breast cancer MCF7 cells, MDA-MB-231 cells, and various other tumor cell lines with 5–50μM FEN1-IN-SC13 specifically inhibits the flap endonuclease activity of FEN1, interfering with Okazaki fragment maturation and long-patch base excision repair. This leads to DNA replication blockage, accumulation of double-strand breaks, and subsequently induces G1 phase cell cycle arrest, chromosomal instability, and apoptosis[4].

In vivo, intraperitoneal injection of 5mg/kg FEN1-IN-SC13 every other day, combined

with intravenous infusion of MSLN CAR-T cells (5×10^6cells per mouse) in tumor-bearing B-NDG mice (subcutaneously inoculated with HeLa cells), FEN1-IN-SC13 significantly promoted CAR-T cell infiltration into solid tumors and enhanced antitumor activity without causing significant systemic toxicity[5]. Daily intraperitoneal injection of 200μg FEN1-IN-SC13 for 5 consecutive days, combined with local ionizing radiation (IR, 10Gy) in tumor-bearing nude mice (subcutaneously inoculated with HeLa cells), FEN1-IN-SC13 significantly suppressed tumor growth and enhanced radiosensitivity without inducing notable systemic toxicity[6].

References:
[1] Wang Z, Yong C, Fu Y, et al. Inhibition of FEN1 promotes DNA damage and enhances chemotherapeutic response in prostate cancer cells. Med Oncol. 2023 Jul 15;40(8):242.
[2] He L, Yang H, Zhou S, et al. Synergistic antitumor effect of combined paclitaxel with FEN1 inhibitor in cervical cancer cells. DNA Repair (Amst). 2018 Mar;63:1-9.
[3] Liu J, Zhong M, Yang K, et al. Proteomics analysis reveals FEN1 as a promising therapeutic target against small cell neuroendocrine carcinoma of the cervix. Sci Rep. 2025 Jul 30;15(1):27827.
[4] He L, Zhang Y, Sun H, et al. Targeting DNA Flap Endonuclease 1 to Impede Breast Cancer Progression. EBioMedicine. 2016 Dec;14:32-43.
[5] Dong Y, Wang Y, Yin X, et al. FEN1 inhibitor SC13 promotes CAR-T cells infiltration into solid tumours through cGAS-STING signalling pathway. Immunology. 2023 Nov;170(3):388-400.
[6] Li JL, Wang JP, Chang H, et al. FEN1 inhibitor increases sensitivity of radiotherapy in cervical cancer cells. Cancer Med. 2019 Dec;8(18):7774-7780.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA