

Product Data Sheet

Product Name: EOAI3402143

Cat. No.: GC34083

Chemical Properties

Cas. No. 1699750-95-2

SMILES ClC1=C(/C=C(C(NC(CCC)C2=CC=C(OCCN3CCOCC3)C=C2)=O)\C#N)N=C(Cl)C=C1.[E]

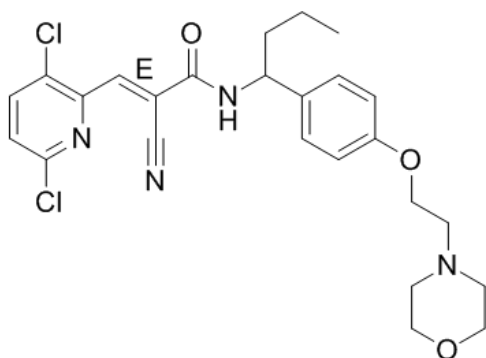
Formula $C_{25}H_{28}Cl_2N_4O_3$ M.Wt 503.42

Solubility DMSO : 50 mg/mL (99.32 mM); Water : < 0.1 mg/mL (insoluble) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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



Protocol

Cell experiment [1]:

Cell lines A549 and H1299 non-small cell lung cancer (NSCLC) cell lines

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

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Preparation Method NSCLC cell lines were cultured in Roswell Park Memorial Institute 1640 (RPMI 1640) medium supplemented with 10% fetal bovine serum (FBS). The cells were treated with the USP5 inhibitor EOAI3402143 at various final concentrations (0, 2, 4, 6, and 8 μ M) for 24-72h.

Reaction Conditions 2–8 μ M; 24-72 hours.

Applications EOAI3402143 suppressed the proliferation and viability of NSCLC cells. EOAI3402143 also downregulated the protein level of cyclin D1 (CCND1) in NSCLC cells.

Animal experiment [2]:

Animal models Nude mice bearing MM1.S myeloma xenografts

Preparation Method Mice were intraperitoneally administered EOAI3402143 (2.5–15mg/kg) once per day for 2 weeks. Tumor growth was monitored.

Dosage form 2.5–15mg/kg; i.p.; once daily for 2 weeks.

Applications EOAI3402143 administration significantly suppressed tumor growth and induced tumor regression. EOAI3402143 also downregulated Usp9x/Usp24 activity and Mcl-1 protein expression levels in the tumor tissues.

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References:

- [1] Zhang Z, Cui Z, Xie Z, et al. Deubiquitinase USP5 promotes non-small cell lung cancer cell proliferation by stabilizing cyclin D1. *Transl Lung Cancer Res.* 2021 Oct;10(10):3995-4011.
- [2] Peterson LF, Sun H, Liu Y, et al. Targeting deubiquitinase activity with a novel small-molecule inhibitor as therapy for B-cell malignancies. *Blood.* 2015 Jun 4;125(23):3588-97.

Background

EOAI3402143 is a novel, multi-target deubiquitinase inhibitor. EOAI3402143 promotes tumor cell apoptosis by inhibiting the activity of USP9x, USP24, and USP5 in a dose-dependent manner^[1-2]. EOAI3402143 can be used in research related to melanoma, multiple myeloma, and pancreatic cancer^[3-4].

In vitro, EOAI3402143 (2–8 μ M) was used to treat non-small cell lung cancer cells for 24–72 hours. EOAI3402143 significantly inhibited the proliferation and viability of the cancer cells and downregulated the expression level of cyclin D1 in the cells^[5]. EOAI3402143 (2–8 μ M) was also used to treat JAK2-V617F-positive leukemia cells for 24–72 hours. EOAI3402143 markedly inhibited the proliferation and induced apoptosis of JAK2-V617F-dependent cells, while downregulating the activity of the autophosphorylated JAK2-V617F pathway^[6].

In vivo, EOAI3402143 (2.5–15mg/kg) was administered via intraperitoneal injection once daily to mice bearing MM1.S myeloma xenografts for 2–4 weeks. EOAI3402143 significantly inhibited tumor growth, induced tumor regression, and downregulated the activity of Usp9x/Usp24 and the protein expression level of Mcl-1 in the tumor tissues^[7]. EOAI3402143 (5mg/kg or 10mg/kg) was injected intraperitoneally every other day for 28 days into BALB/c nude mice bearing H1299 cell xenografts. EOAI3402143 significantly inhibited tumor growth and showed no significant toxic effects on the mice's body weight, pathological status of major organs, or serum biochemical indices^[8].

References:

- [1] Potu H, Peterson LF, Pal A, et al. Usp5 links suppression of p53 and FAS levels in melanoma to the BRAF pathway. *Oncotarget.* 2014 Jul 30;5(14):5559-69.
- [2] Chen W, Shan Y, Wang M, et al. Chicoric acid exerts therapeutic effects in DSS-induced ulcerative colitis by targeting the USP9X/IGF2BP2 axis. *Br J Pharmacol.* 2025 Oct;182(20):4968-

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[3] Wang J, Fang S, Jiang Y, et al. Unraveling the Mechanism of Action of Ubiquitin-Specific Protease 5 and Its Inhibitors in Tumors. Clin Med Insights Oncol. 2024 Oct 9;18:11795549241281932.

[4] Akiyama H, Umezawa Y, Ishida S, et al. Inhibition of USP9X induces apoptosis in FLT3-ITD-positive AML cells cooperatively by inhibiting the mutant kinase through aggresomal translocation and inducing oxidative stress. Cancer Lett. 2019 Jul 1;453:84-94.

[5] Zhang Z, Cui Z, Xie Z, et al. Deubiquitinase USP5 promotes non-small cell lung cancer cell proliferation by stabilizing cyclin D1. Transl Lung Cancer Res. 2021 Oct;10(10):3995-4011.

[6] Akiyama H, Umezawa Y, Watanabe D, et al. Inhibition of USP9X Downregulates JAK2-V617F and Induces Apoptosis Synergistically with BH3 Mimetics Preferentially in Ruxolitinib-Persistent JAK2-V617F-Positive Leukemic Cells. Cancers (Basel). 2020 Feb 10;12(2):406.

[7] Peterson LF, Sun H, Liu Y, et al. Targeting deubiquitinase activity with a novel small-molecule inhibitor as therapy for B-cell malignancies. Blood. 2015 Jun 4;125(23):3588-97.

[8] Xu J, Liu W, Chen L, et al. EOAI3402143 inhibits lung adenocarcinoma progression through the NF- κ B/NR4A1 pathway. Acta Biochim Biophys Sin (Shanghai). 2025 Oct 9.

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