Proteins

Inhibitors



MPT0G211 mesylate

Cat. No.: HY-123976A

CAS No.: 2151854-33-8 $C_{18}H_{19}N_3O_5S$ Molecular Formula:

389.43 Molecular Weight: HDAC Target:

Pathway: Cell Cycle/DNA Damage; Epigenetics

Please store the product under the recommended conditions in the Certificate of Storage:

Analysis.

OH

HN.

Product Data Sheet

BIOLOGICAL ACTIVITY

Description MPT0G211 mesylate is a potent, orally active and selective HDAC6 inhibitor (IC50=0.291 nM). MPT0G211 mesylate displays

> >1000-fold selective for HDAC6 over other HDAC isoforms. MPT0G211 mesylate can penetrate the blood-brain barrier. MPT0G211 mesylate ameliorates tau phosphorylation and cognitive deficits in an Alzheimer's disease model. MPT0G211

mesylate has anti-metastatic and neuroprotective effects. Anticancer activities^{[1][2][3]}.

HDAC6 IC₅₀ & Target

0.291 µM (IC₅₀)

In Vitro MPT0G211 mesylate (0.1 μM; Cells were transfected with pCAX APP 695 and pRK5-EGFP-Tau P301L for 24 h) significantly

inhibited the phosphorylation of tau Ser396^[1].

MPT0G211 mesylate inhibits HDAC6/Hsp90 binding and causes subsequent proteasomal degradation of polyubiquitinated proteins^[1].

MPT0G211 mesylate significantly decreases the phosphorylation of tau by GSK3 β inactivation^[1].

MPT0G211 mesylate (0.1 μM; 24 hours) significantly attenuates the phosphorylation of tau Ser396 and Ser404 in both cell

lines (SH-SY5Y and Neuro-2a cells were transfected for 24 h with pCAX APP 695 and pRK5-EGFP-Tau P301L)^[1].

MPT0G211 mesylate inhibits MDA-MB-231 and MCF-7 cells growth (GI₅₀=16.19 and 5.6 μM, respectively)^[2].

In AML cells, MPT0G211 mesylate potentiates the cytotoxic effects of DOXO by impairing DNA repair machinery and activating Bcl-2-associated X protein (BCL-XL)-dependent cell apoptosis^[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo MPT0G211 mesylate (50 mg/kg; p.o.; daily for 3 months) significantly ameliorates the spatial memory impairment^[1].

MPT0G211 mesylate (25 mg/kg; i.p.; qd; day 73 post-tumor injection) reduces numbers of nodules and lung weights^[2].

MPT0G211 mesylate treatment not only diminishes tau phosphorylation by inhibition GSK3β activity but also enhances the acetylation of Hsp90, which causes the downregulation of HDAC6/Hsp90 binding and facilitates proteasomal degradation of polyubiquitinated p-tau^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Triple transgenic (3×Tg-AD) mice (harboring APP _{Swe} and tau _{P301L} mutant transgenes ^[1]
Dosage:	50 mg/kg
Administration:	P.o.; daily for 3 months

Result:	Significantly ameliorated the spatial memory impairment.
Animal Model:	Female SCID mice (bearing MDA-MB-231 cells) ^[2]
Dosage:	25 mg/kg
Administration:	I.p.; qd; day 73 post-tumor injection
Result:	Significantly reduced numbers of nodules and lung weights.

REFERENCES

[1]. Fan SJ, et al. The novel histone de acetylase 6 inhibitor, MPT0G211, ameliorates tau phosphorylation and cognitive deficits in an Alzheimer's disease model. Cell Death Dis. 2018;9(6):655. Published 2018 May 29.

[2]. Hsieh YL, et al. Anti-metastatic activity of MPT0G211, a novel HDAC6 inhibitor, in human breast cancer cells in vitro and in vivo. Biochim Biophys Acta Mol Cell Res. 2019;1866(6):992-1003.

[3]. Tu HJ, et al. The anticancer effects of MPT0G211, a novel HDAC6 inhibitor, combined with chemotherapeutic agents in human acute leukemia cells. Clin Epigenetics. 2018;10(1):162. Published 2018 Dec 29.

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

Tel: 609-228-6898

Fax: 609-228-5909

 $\hbox{E-mail: } tech @ Med Chem Express.com$

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