FPFT-2216

Cat. No.: HY-145319

CAS No.: 2367619-87-0

Molecular Formula: $C_{12}H_{12}N_4O_3S$

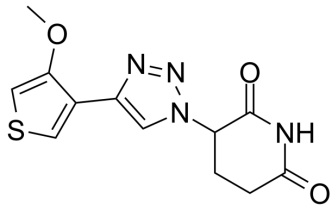
Molecular Weight: 292.31

Target: Phosphodiesterase (PDE); Casein Kinase; Molecular Glues

Pathway: Metabolic Enzyme/Protease; Cell Cycle/DNA Damage; Stem Cell/Wnt; PROTAC

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (342.10 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.4210 mL	17.1051 mL	34.2103 mL
	5 mM	0.6842 mL	3.4210 mL	6.8421 mL
	10 mM	0.3421 mL	1.7105 mL	3.4210 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.55 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.55 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (8.55 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

FPFT-2216, a “molecular glue” compound, degrades phosphodiesterase 6D (PDE6D), zinc finger transcription factors Ikaros (IKZF1), Aiolos (IKZF3), and casein kinase 1α (CK1α). FPFT-2216 can be used for the research of cancer and inflammatory disease[1][2].

IC_{50} & Target	PDE6D	CK1α	IKZF1	IKZF3

In Vitro

FPFT-2216 (1 μM; 5 hours) is able to degrade PDE6D, in addition to its known targets IKZF1, IKZF3, and CK1α in MOLT4 cells[1]

.

FPFT-2216 (1 μM; 0 h, 2 h, 4 h, 6 h, 16 h, 24 h) shows complete degradation of PDE6D within 2 h, and the degradation of PDE6D persists for at least 24 h in MOLT4 cells[1].

FPFT-2216 (0 nM, 1.6 nM, 8 nM, 40 nM, 200 nM, 1 μM; 4 h) exhibits over 50% degradation of PDE6D at a dose of 8 nM, while maximum degradation of PDE6D along with IKZF1, IKZF3, and CK1α at a dose of 200 nM in MOLT4 cells[1].

FPFT-2216 does not impede the growth of $KRAS^{G12C}$-dependent MIA PaCa-2 cells[1].

FPFT-2216 (10, 20, 40 μM; 14 or 24 h) highly up-regulates the production of IL-2 although it is less potent than that of Pomalidomide in Naive $CD4^+$ T cells[2].

FPFT-2216 (10 μM; 14 or 24 h) degrades IKZF1 and CK-1α among ubiquitin–proteasomal degradative substrates of immunomodulatory drugs (IMiDs) in Naive $CD4^+$ T cells[2].

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

Western Blot Analysis[1]

Cell Line:	MOLT4 cells
Concentration:	1 μM
Incubation Time:	0 h, 2 h, 4 h, 6 h, 16 h, 24 h
Result:	Showed complete degradation of PDE6D within 2 h, and the degradation of PDE6D persisted for at least 24 h.

Western Blot Analysis[1]

Cell Line:	MOLT4 cells
Concentration:	0 nM, 1.6 nM, 8 nM, 40 nM, 200 nM, 1 μM
Incubation Time:	4 h
Result:	Exhibited over 50% degradation of PDE6D at a dose of 8 nM, while maximum degradation of PDE6D along with IKZF1, IKZF3, and CK1α at a dose of 200 nM.

In Vivo

FPFT-2216 (30 mg/kg; p.o. or i.p.) induces significant degradation of CK-1α, and IKZF1 in $CRBN^{I391V}$ mice[2].

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

Animal Model:	$CRBN^{I391V}$ mice[2]
Dosage:	30 mg/kg (solubilized in 0.5% carboxymethylcellulose/sodium and 0.25% Tween 80)
Administration:	p.o. or i.p.
Result:	Induced significant degradation of CK-1α, and IKZF1.

REFERENCES

[1]. Teng M, et al. Development of PDE6D and CK1α Degraders through Chemical Derivatization of FPFT-2216. J Med Chem. 2022 Jan 13;65(1):747-756.

[2]. Gemechu Y, et al. Humanized cereblon mice revealed two distinct therapeutic pathways of immunomodulatory drugs. Proc Natl Acad Sci U S A. 2018;115(46):11802-11807.

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

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