

PROTAC FSP1 degrader 1

Chemical Properties

CAS No. :	3096510-51-6
Formula:	C41H35N9O6
Molecular Weight:	749.79
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

Biological Description

Description	PROTACFSP1 degrader 1 is an effective and selective PROTAC degrader that targets FSP1. It significantly induces the accumulation of lipid peroxides within cells. Additionally, PROTACFSP1 degrader 1 works synergistically with GPX4 inhibitors to enhance ferroptosis. It increases the mRNA expression of ferroptosis-related proteins (GPX4, FTH1, ACSL4, TfR1, FSP1) and is instrumental in the study of triple-negative breast cancer.
Targets(IC50)	Ferroptosis, Glutathione Peroxidase
In vitro	PROTAC FSP1 degrader 1 (Compound 2307) effectively induces 83.2% degradation of FSP1 protein at concentrations ranging from 0 to 2 μ M over a 24-hour period, with a DC50 of 263.7 nM and no hook effect, while showing a concentration-dependent degradation in MDA-MB-231 cells. Pre-treatment with MG132, Pevonedistat (MLN4924), and Pomalidomide significantly inhibits FSP1 degradation mediated by PROTAC FSP1 degrader 1 at 1 μ M for 24 hours. When used alone at 0-100 μ M for 24-48 hours, PROTAC FSP1 degrader 1 does not exhibit significant cytotoxicity on MDA-MB-231 cells, as cell viability remains largely unchanged; however, it synergistically enhances cell death when combined with the GPX4 inhibitor RSL3. At 10 μ M for 24 hours, PROTAC FSP1 degrader 1 significantly reduces the proportion of EdU-positive cells and inhibits MDA-MB-231 cell proliferation. It also induces the accumulation of reactive oxygen species (ROS) in MDA-MB-231 cells, triggering lipid peroxidation and ferroptosis. Ferroptosis is further confirmed as Fer-1 reverses the lipid peroxidation induced by FSP1 degradation. Additionally, at 0.2-5 μ M for 24 hours, PROTAC FSP1 degrader 1 upregulates the mRNA expression of ferroptosis-related genes GPX4, FTH1, ACSL4, TfR1, and FSP1 in MDA-MB-231 cells.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3337 mL	6.6685 mL	13.3371 mL
5 mM	0.2667 mL	1.3337 mL	2.6674 mL
10 mM	0.1334 mL	0.6669 mL	1.3337 mL
50 mM	0.0267 mL	0.1334 mL	0.2667 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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