Product Datasheet

Zotatifin

Catalog No. **BP-02221** · CAS **2098191-53-6** · Form **free base** · Physical state **other** · Color **white to light yellow** · Version **1.0** · Revision **2026-09-02**

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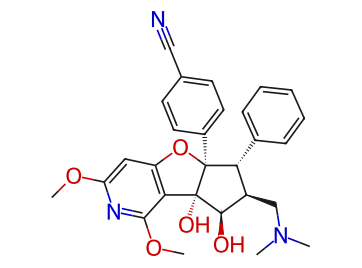
Target	Research area
Eukaryotic Initiation Factor (eIF); SARS-CoV; Apoptosis	**Infection; Cancer**

Molecular formula	$C_{28}H_{29}N_3O_5$
Molecular weight	**487.5470**

STRUCTURE



DESCRIPTION

Zotatifin,eFT226, is a potent, selective, and well-tolerated eIF4A inhibitor. Zotatifin promotes eIF4A binding to specific mRNA sequences with recognition motifs in the 5'-UTRs (IC50=2 nM) and interferes with the assembly of the eIF4F initiation complex. Zotatifin shows robust antiviral effects, it effectively reduces viral infectivity by inhibiting SARS-CoV-2 NP protein biogenesis (IC90=37 nM). Zotatifin induces cell apoptosis.

BIOLOGICAL ACTIVITY

In Vitro

Zotatifin induces the formation of a stable ternary complex [eIF4A-RNA-eFT226]. Zotatifin increases the residence time for eIF4A1 binds to an AGAGAG RNA surface, the Kd values are 0.021 μM and 8.0 μM, respectively for eFT226 presence or absence.

Zotatifin inhibits in vitro translation as a sequence-dependent manner, the IC50 values are 1.5 nM, 13.8 nM, 92.5 nM, and 217.5 nM, respectively in an MDA-MB-231 cell line with transiently transfected AGAGAG, GGCGGC, CCGCCG and CAACAA 5’-UTRs-containing sequences.

Zotatifin (0.0001 μM-1 μM; 72 hours) inhibits tumor cells growth as a dose-dependent manner. It shows a potent anti-proliferative activity (GI50<15 nM) in MDA-MB-231 tumor cells, but eIF4A1 F163L mutation rescues eFT226 anti-proliferative activity.

Zotatifin (0.0001 μM-1 μM; 72 hours) inhibits tumor cell growth, exhibits GI50 values for TMD8, SU-DHL-2, HBL1, Pfeiffer, SU-DHL-6, SU-DHL-10, VAL, Carnaval, U2973, Ramos, Jeko1, Mino, and Rec-1 cells are 4.1 nM, 3 nM, 5.6 nM, 3.7 nM, 5.3 nM, 7.3 nM, 6.6 nM, 4.4 nM, 4.2 nM, 4.6 nM, 7.9 nM, 11.2 nM and 11.8 nM, respectively.

Zotatifin (30 μM-100 μM; 3 or 24 hours) results in translational regulation of oncogenic protein, decreases MYC,CCND3,BCL2 and MCL1 protein expression as a time- and dose-dependent manner.

The anti-viral activity of Zotatifin is demonstrated by various assays: such as TCID50 assay, Plaque assay, NP-staining assay, et al.

Zotatifin (10 nM, 100 nM, 200 nM, 500 nM, 2 μM, 10 μM; 1 or 2 hours pre-treatment before virus isolates) decreases

the detection of the viral NP protein and reduces viral infectivity in a concentration-dependent matter in Vero E6 cells cells infected with SARS-CoV-2 isolates.

In Vivo
Zotatifin (intravenous injection; 1 mg/kg; 14-22 days) decreases tumor volume, inhibits the TMD8 xenograft-bearing, HBL1 xenograft-bearing, Pfeiffer xenograft-bearing, SU-DHL-6 xenograft-bearing, SU-DHL-10 xenograft-bearing and Ramos-bearing animals'tumor growth as percentage of 97%, 87%, 70%, 83%, 37% and 75%, respectively.
Zotatifin (intravenous injection; 0.001 mg/kg-1 mg/kg; 15 days) inhibits the growth of B-cell lymphoma xenografts and is well-tolerated against B-cell lymphoma xenograft models in vivo.

SOLUBILITY

Soluble in DMSO

In vitro	DMSO : ≥ 100 mg/mL

REFERENCES

[1]. Peggy A. Thompson, et al. Preclinical Evaluation of eFT226, a Novel, Potent and Selective eIF4A Inhibitor with Anti-tumor Activity in B-cell Malignancies.

[2]. Gordon DE, et al. A SARS-CoV-2 protein interaction map reveals targets for drug repurposing.Nature. 2020 Apr 30.