MPM-1

Cat. No.: HY-151503

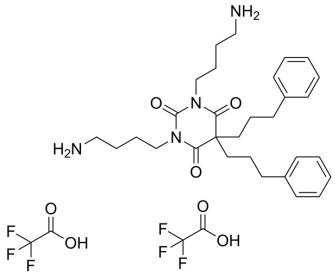
Molecular Formula: $C_{34}H_{44}F_6N_4O_7$

Molecular Weight: 734.73

Target: Autophagy

Pathway: Autophagy

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



BIOLOGICAL ACTIVITY

Description

MPM-1, a marine Eusynstyelamides mimic, is a potent anticancer agent. MPM-1 can rapidly kill cancer cells in vitro by inducing a necrosis-like death. MPM-1 has the ability to induce immunogenic cell death. MPM-1 causes perturbation of autophagy and lysosomal swelling in cancer cells[1].

IC_{50} & Target

Autophagy[1]

In Vitro

MPM-1 (0-50 μM; 4 h) has cytotoxicity against various human cancer cell lines[1].
MPM-1 (8.5 and 17.0 μM; 1-6 h) causes perturbation of autophagy and lysosomal swelling[1].
MPM-1 induces the release and exposure of damage-associated molecular patterns (DAMPs) related to immunogenic cell death[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[1]

Cell Line:	Jurkat, Ramos, HSC-3, MCF-7, A375, et al.
Concentration:	0-50 μM
Incubation Time:	4 h
Result:	Exhibited potent cytotoxicity against Jurkat, Ramos, HSC-3, MCF-7, A375 with IC_{50}s of 6.62 ± 1.60 μM, 7.53 ± 2.01 μM, 8.53 ± 0.57 μM, 14.06 ± 2.71 μM, 14.52 ± 0.22 μM, respectively.

Immunofluorescence[1]

Cell Line:	HSC-3
Concentration:	8.5 and 17.0 μM
Incubation Time:	1, 2, 4 and 6 h
Result:	Significantly increased the total number of autophagy markers p62 (substrate of autophagy) and LC3B. Caused the distribution of the lysotracker dye more diffuse and less intense, indicating that lysosomal morphology was influenced.

Western Blot Analysis[1]

Cell Line:	Ramos and HSC-3
Concentration:	8.5 μM for Romas and 17.0 μM for HSC-3
Incubation Time:	0.5, 1, 2, 3 and 4 h
Result:	Increased the release of high mobility group box 1 (HMGB1) from cells.

REFERENCES

[1]. Susannah von Hofsten, et al. The marine natural product mimic MPM-1 is cytolytic and induces DAMP release from human cancer cell lines. Sci Rep. 2022 Sep 16;12(1):15586.

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