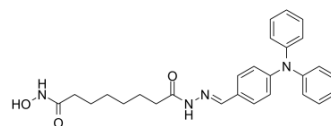


WT-161

Cat. No.:	HY-100871		
CAS No.:	1206731-57-8		
Molecular Formula:	C ₂₇ H ₃₀ N ₄ O ₃		
Molecular Weight:	458.55		
Target:	HDAC; Apoptosis		
Pathway:	Cell Cycle/DNA Damage; Epigenetics; Apoptosis		
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 (218.08 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.1808 mL	10.9039 mL	21.8079 mL
	5 mM	0.4362 mL	2.1808 mL	4.3616 mL
	10 mM	0.2181 mL	1.0904 mL	2.1808 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (5.45 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (5.45 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (5.45 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

WT-161 is a potent and selective HDAC6 inhibitor with an IC₅₀ of 0.40 nM.

IC₅₀ & Target

Target	IC ₅₀ (nM)
HDAC6	0.4 nM (IC ₅₀)
HDAC1	8.35 nM (IC ₅₀)
HDAC2	15.4 nM (IC ₅₀)
HDAC3	51.6 nM (IC ₅₀)
HDAC8	1430 nM (IC ₅₀)

In Vitro	<p>WT161 selectively inhibits HDAC6 and dramatically increases levels of acetylated α-tubulin (Ac-α-tubulin) with little effect on global lysine acetylation. WT161 induces significant toxicity in all multiple myeloma cell lines tested, with IC₅₀s between 1.5 and 4.7 μM. WT161 in combination with bortezomib triggers significant accumulation of polyubiquitinated proteins and cell stress, followed by caspase activation and apoptosis. More importantly, this combination treatment is effective in bortezomib-resistant cells and in the presence of bone marrow stromal cells, which have been shown to mediate multiple myeloma cell drug resistance^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>WT161 shows toxicity at 100 mg/kg i.p., but WT161 is well tolerated at 50 mg/kg i.p.. Bortezomib combined with WT161 demonstrates a significant antitumor effect^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

PROTOCOL

Cell Assay ^[1]	<p>MM.1S cells are treated with increasing concentrations of WT161 (0-10 μM) for 48 hours. Cell viability is determined using the MTT assay^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
Animal Administration ^[1]	<p>Mice: Mice tumor xenograft are assigned into cohorts receiving vehicle (control), BTZ (0.5 mg/kg, i.v.), WT161 (50 mg/kg, i.p.), or BTZ+WT161. WT161 is administered for five consecutive days each week, and BTZ is given on a twice-weekly schedule. Caliper measurements of the longest perpendicular tumor diameters are performed on alternate days to estimate the tumor volume^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- J Mol Med (Berl). 2019 Aug;97(8):1183-1193.
- Research Square Preprint. 2020 Aug.

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REFERENCES

[1]. Hideshima T, et al. Discovery of selective small-molecule HDAC6 inhibitor for overcoming proteasome inhibitor resistance in multiple myeloma. Proc Natl Acad Sci U S A. 2016 Nov 15;113(46):13162-13167.

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

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