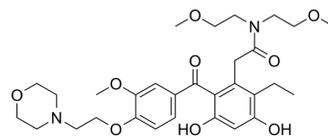


KW-2478

Cat. No.:	HY-13468		
CAS No.:	819812-04-9		
Molecular Formula:	C ₃₀ H ₄₂ N ₂ O ₉		
Molecular Weight:	574.66		
Target:	HSP		
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro	DMSO : 200 mg/mL (348.03 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
			10 mg	
Preparing Stock Solutions	1 mM	1.7402 mL	8.7008 mL	17.4016 mL
	5 mM	0.3480 mL	1.7402 mL	3.4803 mL
	10 mM	0.1740 mL	0.8701 mL	1.7402 mL
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 5 mg/mL (8.70 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 5 mg/mL (8.70 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 5 mg/mL (8.70 mM); Clear solution 			

BIOLOGICAL ACTIVITY

Description	KW-2478 is an inhibitor of Hsp90α, with an IC ₅₀ of 3.8 nM, and has antitumor activity against various human hematological tumor cells.
IC₅₀ & Target	HSP90α 3.8 nM (IC ₅₀)
In Vitro	KW-2478 is an inhibitor of Hsp90, with an IC ₅₀ of 3.8 nM for Hsp90α. KW-2478 shows anti-proliferative activity against

multiple myeloma (MM) and non-Hodgkin's lymphoma (NHL), with GI₅₀s of 0.30 μM (OPM-2/GFP), 0.34 μM (KMS-11), 0.39 μM (RPMI 8226), 0.12 μM (NCI-H929), 0.36 μM (Raji), 0.098 μM (SR), and 0.33 μM (SC-1). KW-2478 also inhibits the transcription of c-Maf and Cyclin D1 genes by mainly suppressing the function of Cdk9^[1].

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

In Vivo

KW-2478 (25-200 mg/kg, i.v.) inhibits tumor growth in combined immunodeficiency (SCID) mice bearing NCI-H929 cells, without body weight loss. KW-2478 (100 mg/kg, i.v.) causes degradation of the Hsp90 client proteins (IGF-1Rβ, c-Raf-1, Cdk9) levels and dephosphorylated Erk1/2 proteins in NCI-H929 tumors of mice^[1].

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

PROTOCOL

Cell Assay ^[1]

The cells are plated into 96-well plates and treated with KW-2478. After 72 hours of cultivation, cell viability is determined using WST-1. WST reagent is added to the wells, followed by incubation for 4 hours at 37°C. After that, the absorbance at 450 nm with reference at 650 nm is measured with a microplate spectrophotometer^[1].

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

Animal Administration ^[1]

Mice^[1]

Severe combined immunodeficient (SCID) mice are intraperitoneally injected with anti-asialo GM1 antibody. The next day, all mice are subcutaneously inoculated with NCI-H929 cells (1×10^7 cells) suspended in PBS containing 50% of Matrigel. After 10 days, tumor volume is measured using the Antitumor test system II, a computer-operated system including software and instruments. SCID mice with tumors (190 to 290 mm³) are selected. After randomly grouping, saline (vehicle) or KW-2478 is intravenously administered to mice once or twice daily for 5 days. 17-AAG is intravenously administered to mice. Tumor volume is calculated by the Anti-tumor test system II as follows: Tumor volume = DL × DS × DS × 1/2. Fourteen days after the initial administration, blood samples of each mouse are obtained, followed by measurement of serum M protein (Ig kappa chain) with Human Kappa-b&f ELISA Quantitation Kit. The statistical analysis is performed using SAS software^[1].

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

CUSTOMER VALIDATION

- Int J Mol Sci. 2023 Nov 4, 24(21), 15971.
- Vet Microbiol. February 2022, 109316.

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REFERENCES

[1]. Nakashima T, et al. New molecular and biological mechanism of antitumor activities of KW-2478, a novel nonansamycin heat shock protein 90 inhibitor, in multiple myeloma cells. Clin Cancer Res. 2010 May 15;16(10):2792-802.

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

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