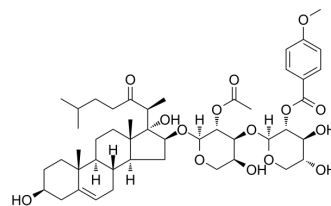


OSW-1

Cat. No.:	HY-101213
CAS No.:	145075-81-6
Molecular Formula:	C ₄₇ H ₆₈ O ₁₅
Molecular Weight:	873.03
Target:	Others
Pathway:	Others
Storage:	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (114.54 mM; Need ultrasonic)					
		Solvent Concentration	Mass			
	Preparing Stock Solutions			1 mg	5 mg	10 mg
		1 mM		1.1454 mL	5.7272 mL	11.4544 mL
		5 mM		0.2291 mL	1.1454 mL	2.2909 mL
	10 mM		0.1145 mL	0.5727 mL	1.1454 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (2.86 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (2.86 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (2.86 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	OSW-1, isolated from <i>Ornithogalum caudatum</i> , is a specific antagonist of osterol-binding protein (OSBP) and OSBP-related protein 4 (ORP4) with GI ₅₀ s in the nanomolar range in human cancer lines.
IC₅₀ & Target	OSBP/ORP4 ^[1] .
In Vitro	OSW-1 has a strong inhibitory effect on colon carcinoma cells with low cytotoxicity on normal cells. The anti-proliferative effects of OSW-1 on SW480 and LoVo colon carcinoma cells are characterized by measuring cell viability using the CCK8 assay, and compared the results with other clinical anticancer agents. SW480 and LoVo cell lines are derived from a Dukes'

stage B colon carcinoma and a colon carcinoma metastatic nodule, which represent non-metastatic and metastatic carcinomas, respectively. OSW-1 exhibits not only extremely strong anticancer activity in SW480 and LoVo cell lines with an IC₅₀ of nanomolar concentration, but is also more potent than other anticancer agents by 10-100 times, with a lower cytotoxic effect on normal epithelial cells. These results indicate that OSW-1 has a powerful anticancer effect, but lower cytotoxic effect on normal cells^[2].

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

In Vivo

To ascertain whether or not OSW-1 is as effective in vivo, a nude mouse model inoculated by LoVo cells is adopted, in which OSW-1 treatment is performed when tumors became palpable. The results show that the size of tumors in treated mice is smaller on average than control mice. The significant difference is observed from the 15-17 th day following treatment, and this difference is gradually increased until the animals are sacrificed. Compared with the control group, the tumor weight of the OSW-1-treated group significantly decreases (P<0.05). Additionally, no apparent side effects are observed in OSW-1-treated mice. These results demonstrate that OSW-1 has powerful effects on suppressing colon tumor growth without significant side effects in vivo^[2].

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PROTOCOL

Cell Assay^[2]

To observe the effect of OSW-1 on cell viability, the colon cancer cell lines LoVo and SW480 cells are seeded in 96-well plates at a concentration of 1×10^5 cells/well. Following overnight incubation, the cells are treated with several concentrations of OSW-1 (11.25, 22.5, 45, 90, 180 ng/mL) and incubated at 37°C in 5% CO₂ for 24, 48, and 72 h. Cell viability analysis is determined using a Cell Counting Kit-8 Assay. Each assay is performed in quintuplicate and repeated three times^[2].

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Animal Administration^[2]

Mice^[2]

Four-week-old male nude mice are used. Animals are acclimatized to the animal housing facility for a period of 7 days before the beginning of the experiments. LoVo human colon cancer cells (5×10^6 cells in 100 μ L) are injected subcutaneously into the right flank of 18 nude mice. When the tumor becomes palpable, the nude mice are randomized into two groups: i) intraperitoneal injection of PBS (500 μ L) daily in 9 nude mice; and ii) intraperitoneal injection of OSW-1 (0.01 mg/kg diluted in PBS in 500 μ L) daily in 9 nude mice. The body weights of the animals and tumor size are recorded every day, and the tumor volume is calculated^[2].

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

REFERENCES

[1]. Burgett AW, et al. Natural products reveal cancer cell dependence on oxysterol-binding proteins. *Nat Chem Biol.* 2011 Aug 7;7(9):639-47.

[2]. Zhang Y, et al, Effective cytotoxic activity of OSW-1 on colon cancer by inducing apoptosis in vitro and in vivo. *Oncol Rep.* 2017 Jun;37(6):3509-3519.

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

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