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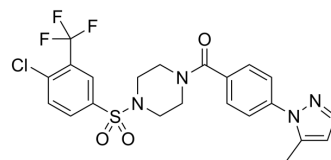
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Smurf1-IN-A01

Cat. No.:	HY-110195
CAS No.:	1007647-73-5
Molecular Formula:	C ₂₂ H ₂₀ ClF ₃ N ₄ O ₃ S
Molecular Weight:	512.93
Target:	HSP; Interleukin Related; MyD88; NF-κB; Estrogen Receptor/ERR
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease; Immunology/Inflammation; NF-κB; Vitamin D Related/Nuclear Receptor
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 62.5 mg/mL (121.85 mM; Need ultrasonic)				
	Preparing Stock Solutions	Solvent Concentration Mass	1 mg	5 mg	10 mg
		1 mM	1.9496 mL	9.7479 mL	19.4958 mL
		5 mM	0.3899 mL	1.9496 mL	3.8992 mL
		10 mM	0.1950 mL	0.9748 mL	1.9496 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: ≥ 2.08 mg/mL (4.06 mM); Clear solution				
	2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (4.06 mM); Clear solution				

BIOLOGICAL ACTIVITY

Description	Smurf1-IN-A01 is a Smurf1 inhibitor. Smurf1-IN-A01 has anticancer activity and can be used for the research of osteoporosis and age-related macular degeneration ^{[1][2][3][4]} .		
IC ₅₀ & Target	IL-1β	HSP90β	ERα
In Vitro	Smurf1-IN-A01 (10 μM, 30-60 min) blocked C-type lectin receptor-2d mediated degradation of MyD88 in RAW264.7 cells upon stimulation with β-glucans ^[1] . Smurf1-IN-A01 (10 μM, 24 h) attenuates the effect of enhancing the ALP activity and Alizarin red S staining in C3H10T1/2 cells ^[2] . Smurf1-IN-A01 (10 μM, 12 h) decreases ER alpha protein and ERE-luciferase activity in MCF-7 and T47D cells ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

In Vivo

Smurf1-IN-A01 (10 μ M, 2 μ L, Injected into vitreous cavity by micro-syringe, single dose) alleviated retinal injury in retinal degeneration model mice^[4].

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

Animal Model:	retinal degeneration model mice ^[4]
Dosage:	10 μ M ,2 μ L
Administration:	Injected into vitreous cavity by micro-syringe
Result:	Reduced drusen-like spots. Resulted outer nuclear layers wider and straighter. Caused inner segment and outer segment hinge of photoreceptor cells disappeared. Down-regulated NLRP3 and inhibited IL-1 β . Could decrease the death in NaIO ₃ retina.

CUSTOMER VALIDATION

- Blood Adv. 2021 Sep 24;bloodadvances.2021004572.

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REFERENCES

- [1]. Li F, et al. C-type lectin receptor 2d forms homodimers and heterodimers with TLR2 to negatively regulate IRF5-mediated antifungal immunity [J]. Nature Communications, 2023, 14(1): 6718.
- [2]. Qu M, et al. HSP90 β chaperoning SMURF1-mediated LATS proteasomal degradation in the regulation of bone formation [J]. Cellular Signalling, 2023, 102: 110523.
- [3]. Yang H, et al. SMURF1 facilitates estrogen receptor α signaling in breast cancer cells [J]. Journal of experimental & clinical cancer research, 2018, 37(1): 1-12.
- [4]. Li D, et al. Smurf1: A possible therapeutic target in dry age-related macular degeneration [J]. Experimental Eye Research, 2023, 233: 109549.
- [5]. Cao Y, et al. Selective small molecule compounds increase BMP-2 responsiveness by inhibiting Smurf1-mediated Smad1/5 degradation. Sci Rep. 2014 May 14;4:4965.

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

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