NSC117079

Cat. No.:	HY-19819			
CAS No.:	500363-63-3			
Molecular Formula:	$C_{20}H_{15}N_3O_7S_2$			
Molecular Weight:	473.48			
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 : 50 mg/mL (10					
Preparing Stock Solutions		Solvent Mass Concentration	1 mg	5 mg	10 mg	
	1 mM	2.1120 mL	10.5601 mL	21.1202 mL		
		5 mM	0.4224 mL	2.1120 mL	4.2240 mL	
		10 mM	0.2112 mL	1.0560 mL	2.1120 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 (5.28 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (5.28 mM); Clear solution 					

BIOLOGICAL ACTIVITY					
Description	NSC117079 is a novel PHLPP inhibitor.				
IC ₅₀ & Target	PHLPP ^[1]				
In Vitro	NSC-117079 at 30 μM induces neutrophil adhesion to plated fibrinogen from 9.0±2.4% to 27.0±8.0% and enhanced neutrophil adhesion caused by 50 ng/mL GM-CSF from 22.9±6.0% to 47.6±10.9%. Neutrophil adhesion is followed by neutrophil transendothelial migration. Results suggest that PHLPP inhibitor NSC-117079 is effective in preventing Akt from dephosphorylation in neutrophils, and Akt phosphatase PHLPP serves to attenuate neutrophil adhesion but not migration ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.				

Product Data Sheet

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In Vivo

A single intraarticular injection of the Phlpp inhibitor NSC117079 attenuates mechanical allodynia and slows articular cartilage degradation in joints with a destabilized meniscus. Animals treated with the Phlpp inhibitor seven weeks after injury maintain normal activity levels, while those in the control group travel shorter distances and are less active three months after the joint injury. NSC117079 also increases production of cartilage extracellular matrix components (glycosaminoglycans and aggrecan) in over 90% of human articular cartilage explants from osteoarthritis patients and increased phosphorylation of Phlpp1 substrates (AKT2, ERK1/2 and PKC) in human articular chondrocytes^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration ^[1] Mice^[1]

Posttraumatic osteoarthritis is induced in male C57Bl/6 mice by surgically destabilizing the meniscus. Seven weeks after surgery, mice receive a single intra-articular injection of the PHLPP inhibitor NSC117079 (8 µM) or saline. Mechanical allodynia is measured with von Frey assays, mobility is tracked in an open field system, and cartilage damage is assessed histologically^[1].

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

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

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