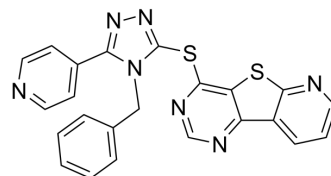


TH1020

Cat. No.:	HY-116961		
CAS No.:	1841460-82-9		
Molecular Formula:	C ₂₃ H ₁₅ N ₇ S ₂		
Molecular Weight:	453.54		
Target:	Toll-like Receptor (TLR); Bacterial		
Pathway:	Immunology/Inflammation; Anti-infection		
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 : 2 mg/mL (4.41 mM; ultrasonic and warming and adjust pH to 2 with 1M HCl and heat to 80°C)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	2.2049 mL	11.0244 mL	22.0488 mL
5 mM	---	---	---
10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

TH1020 is a potent and selective toll-like receptor 5 (TLR5)/flagellin complex antagonist with an IC₅₀ of 0.85 μM. TH1020 inhibits flagellin-induced TLR5 signaling. TH1020 is inactive against TLR2, TLR3, TLR4, TLR7 and TLR8^[1].

IC₅₀ & Target

TLR5

In Vitro

TH1020 inhibits the downstream signaling transduction mediated by the formation of the TLR5/Flagellin complex. TH1020 is suggested to compete with flagellin and disrupt its association with TLR5. TH1020 almost completely abolishes the TLR5-mediated TNF-α secretion at 0.37 μM^[1].

The IL-17C secretion is almost completely abolished by TH1020 (0.5 μM) in bacterial strain C83901 infected IPEC-J2 cells^[2]. Blocking TLR5 with TH1020 (0.5 μM) dramatically inhibits porcine beta-defensin (pBD)-2, claudin-1 and -2 mRNA expression in C83091 infected IPEC-J2 cells^[2].

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

CUSTOMER VALIDATION

- Gut. 2023 Jul 25;gutjnl-2023-330291.
- Sci Rep. 2023 Oct 28;13(1):18490.
- PLoS Negl Trop Dis. 2023 Jan 27;17(1):e0011085.

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REFERENCES

- [1]. Lei Yan, et al. Pyrimidine Triazole Thioether Derivatives as Toll-Like Receptor 5 (TLR5)/Flagellin Complex Inhibitors. ChemMedChem. 2016 Apr 19;11(8):822-6.
- [2]. Yu Luo, et al. Toll-like Receptor 5-mediated IL-17C Expression in Intestinal Epithelial Cells Enhances Epithelial Host Defense Against F4 + ETEC Infection. Vet Res. 2019 Jun 20;50(1):48.
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Caution: Product has not been fully validated for medical applications. For research use only.

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