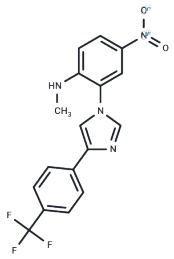
Data Sheet (Cat.No.T15017)

TargetMol

CU-T12-9

Chemical Properties



CAS No. : 1821387-73-8

Formula: C17H13F3N4O2

Molecular Weight: 362.31

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	CU-T12-9 is a potent TLR1/2 agonist(EC50 of 52.9 nM in HEK-Blue hTLR2 SEAP assay). It acts by activating the NFkB pathway, upregulating proinflammatory cytokines, and enhancing TLR1 and TLR2 dimerization.CU-T12-9 activates both the innate and the adaptive immune systems. CU-T12-9 selectively activates the TLR1/2 heterodimer, not TLR2/6. CU-T12-9 signals through NF-κB and invokes an elevation of the downstream effectors TNF-α, IL-10, and iNOS.
Targets(IC50)	TLR
In vitro	CU-T12-9 directly targets TLR1/2 to initiate downstream signaling. It specifically induces TLR1/2 activation, which can be blocked by either the anti-hTLR1 or anti-hTLR2 antibody, but not the anti-hTLR6 antibody. By binding to both TLR1 and TLR2, CU-T12-9 facilitates TLR1/2 heterodimer formation, activating downstream signaling. Fluorescence anisotropy assays revealed competitive binding to the TLR1/2 complex between CU-T12-9 and Pam3CSK4, with an IC50 of 54.4 nM. CU-T12-9 signals through nuclear factor κB (NF-κB) and elevates downstream effectors tumor necrosis factor-α (TNF-α), interleukin-10 (IL-10), and inducible nitric oxide synthase (iNOS)[1].

Solubility Information

Solubility	DMSO: 250 mg/mL (690.02 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 10 mg/mL (27.6 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (27.6 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7601 mL	13.8003 mL	27.6007 mL
5 mM	0.552 mL	2.7601 mL	5.5201 mL
10 mM	0.276 mL	1.380 mL	2.7601 mL
50 mM	0.0552 mL	0.276 mL	0.552 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Cheng K, et al. Specific activation of the TLR1-TLR2 heterodimer by small-molecule agonists. Sci Adv. 2015;1(3). pii: e1400139.

Chen W, Zhang L, Zhong G, et al.Regulation of microglia inflammation and oligodendrocyte demyelination by Engeletin via the TLR4/RRP9/NF-κB pathway after spinal cord injury.Pharmacological Research.2024: 107448.

Zheng Z, Zhao M, Xu Y, et al.Resolvin D2/GPR 18 axis ameliorates pressure overload-induced heart failure by inhibiting pro-inflammatory macrophage polarization.Journal of Lipid Research.2024: 100679.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481