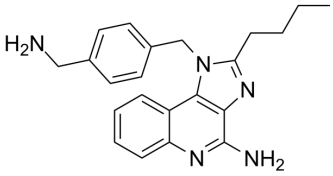
TLR7/8 agonist 1

Cat. No.:	HY-103698
CAS No.:	1258457-59-8
Molecular Formula:	$C_{22}H_{25}N_5$
Molecular Weight:	359.47
Target:	Toll-like Receptor (TLR)
Pathway:	Immunology/Inflammation
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



BIOLOGICAL ACTIVITY

Description	TLR7/8 agonist 1 is a toll-like receptor (TLR7)/TLR8 dual-agonistic imidazoquinoline.	
IC_{50} & Target	TLR7	TLR8
In Vitro	TLR7/8 agonist 1 (Compound 5d) shows prominent immunostimulatory activities. TLR7/8 agonist 1 serves as a convenient precursor for the covalent attachment of fluorophores without significant loss of activity.TLR7/8 agonist 1 retains TLR7-agonistic activity with an EC_{50} of 20 nM. TLR7/8 agonist 1 is covalently coupled directly to commercially-available fluorescein isothiocyanate and rhodamine B isothiocyanate[1]. TLR7/8 agonist 1 (Compound 1) shows substantially different agonistic potencies in human TLR7 (50 nM) and TLR8 (55 nM) primary screens[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

PROTOCOL

Kinase Assay [2]	The induction of NF-κB is quantified using human TLR-2, TLR3, TLR4, TLR5, TLR7, TLR8, TLR9, and NOD-1/NOD-2-specific, rapid-throughput, liquid handler-assisted reporter gene assays. HEK293 cells stably co-transfected with the appropriate hTLR (or NOD) and secreted alkaline phosphatase (sAP) are maintained in HEK-Blue Selection medium. Stable expression of secreted alkaline phosphatase (sAP) under control of NF-κB/AP-1 promoters is inducible by appropriate TLR/NOD agonists, and extracellular sAP in the supernatant is proportional to NF-κB induction. Reporter cells are incubated at a density of ~10^5 cells/mL in a volume of 80 µL/well, in 384-well, flat-bottomed, cell culture-treated microtiter plates in the presence of graded concentrations of stimuli. sAP is assayed spectrophotometrically using an alkaline phosphatase-specific chromogen (present in HEK-detection medium) at 620 nm[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Assay [2]	Fresh human peripheral blood mononuclear cells (hPBMC) are isolated from human blood obtained by venipuncture with informed consent and as per institutional guidelines on Ficoll–Hypaque gradients. Aliquots of PBMCs (10^5 cells in 100 µL/well) are stimulated for 12 h with graded concentrations of test compounds (e.g., TLR7/8 agonist 1; 0.1, 1, 10, and 100 µg/mL). Supernatants are isolated by centrifugation and are assayed in duplicates using analyte-specific multiplexed cytokine/chemokine bead array assays[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Shukla NM, et al. Syntheses of fluorescent imidazoquinoline conjugates as probes of Toll-like receptor 7. Bioorg Med Chem Lett. 2010 Nov 15;20(22):6384-6.

[2]. Beesu M, et al. Structure-Based Design of Human TLR8-Specific Agonists with Augmented Potency and Adjuvanticity. J Med Chem. 2015 Oct 8;58(19):7833-49.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA