CL097

Imidazoquinoline Compound; TLR7/8 ligand

Catalog code: tlrl-c97, tlrl-c97-5

https://www.invivogen.com/cl097

For research use only

Version 23A31-MM

PRODUCT INFORMATION

Contents

- CL097 is provided lyophilized and is available in two quantities:
  - 500 µg: tlrl-c97
  - 5 mg: tlrl-c97-5
- Sterile endotoxin-free water, 1.5 ml with cat. code: tlrl-c97 and 10 ml with cat. code: tlrl-c97-5

Storage and stability

- CL097 is provided as a pale yellow solid and shipped at room temperature. Upon receipt, store at -20°C.
- Upon resuspension, prepare aliquots of CL097 and store at -20°C. Resuspended product is stable 6 months at -20°C. Avoid repeated freeze-thaw cycles.

Quality control

- Purity: ≥95% (UHPLC)
- The biological activity has been verified using cellular assays.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

CL097 is a highly water-soluble derivative of the imidazoquinoline compound R848 (Resiquimod). Like R848, CL097 induces TLR7 and/or TLR8 responses in human and murine immune cells[1,2].

CL097 has been described as a preferential TLR7 agonist[1]. It has been shown as a strong inducer of plasmacytoid dendritic cells (pDCs) activation, which represents a key therapeutic axis for cancer or other diseases[2].

The TLR7/8 agonist activity of CL097 has been confirmed using the reporter cell lines HEK-Blue™ hTLR7, HEK-Blue™ hTLR8, HEK-Dual™ mTLR7, and HEK-Blue™ mTLR8.

CL097 is a more potent hTLR7 agonist than other TLR7/8 agonists, including CL075, and TLR7 agonists, such as Gardiquimod™, Imiquimod, and Loxoribine. However, CL097 is a less potent hTLR8 agonist than CL075 and the TLR8 agonist TL8-506. CL097 also activates murine TLR7 (mTLR7), but not mTLR8.

1. Schön M.P. & Schön M., 2008. TLR7 and TLR8 as targets in cancer therapy. Oncogene. 27:190-199. **2. Wu J. *et al.*, 2019.** pDC activation by TLR7/8 ligand CL097 compared to TLR7 ligand IMQ or TLR9 ligand CpG. J. Immunol. Res. 1749803.

CHEMICAL PROPERTIES

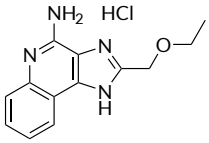
CAS number: 1026249-18-2

Formula: $C_{13}H_{14}N_4O$ • HCl

Molecular weight: 278.74 g/mol

Solubility: 1 mg/ml in water

Structure:



METHODS

Preparation of CL097 stock solution (1 mg/ml)

1. Resuspend CL097 with sterile endotoxin-free water provided.
   - Add 500 µl to 500 µg vial
   - Add 5 ml to 5 mg vial
2. Vortex until completely resuspended.
3. Prepare aliquots of CL097 and store at -20°C.

Working Concentrations:

- 0.3 - 3 µg/ml of CL097 for hTLR8 and mTLR7 in cell culture assays
- 50 ng - 3 µg/ml of CL097 for hTLR7 in cell culture assays

TLR stimulation of HEK-Blue™ cells with CL097

CL097 can be used to stimulate h/mTLR7 or hTLR8 in HEK-Blue™ hTLR7, HEK-Blue™ mTLR7, or HEK-Blue™ hTLR8 cells. These cells stably express an NF-κB-inducible secreted embryonic alkaline phosphatase (SEAP) and overexpress the TLR7 or the TLR8 gene. For more information visit: https://www.invivogen.com/hek-blue-tlr.

1. Stimulate HEK-Blue™ hTLR7 with 50 ng - 3 µg/ml of CL097 and stimulate HEK-Blue™ mTLR7 or hTLR8 cells with 0.3 - 3 µg/ml of CL097.
2. Incubate for 16 - 24 h at 37°C, 5% CO_2.
3. Determine TLR stimulation using a SEAP detection medium, such as QUANTI-Blue™ Solution or HEK-Blue™ Detection or by assessing cytokine expression using an ELISA.

RELATED PRODUCTS

Product	Description	Cat. Code
CL075 (3M002)	TLR7/8 agonist	tlrl-c75
CU-CPT9a	TLR8 antagonist	inh-cc9a
Gardiquimod™	TLR7 Agonist	tlrl-gdqs
HEK-Blue™ hTLR7 Cells	TLR7 reporter cells	hkb-htlr7
HEK-Blue™ hTLR8 Cells	TLR8 reporter cells	hkb-htlr8
HEK-Dual™ mTLR7 Cells	TLR7 reporter cells	hkd-mtlr7ni
Imiquimod (R837)	TLR7 agonist	tlrl-imqs
Loxoribine	TLR7 agonist	tlrl-lox
TL8-506	TLR8 agonist	tlrl-tl8506

TECHNICAL SUPPORT
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