Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

# MRT67307

## Catalog No: tcsc0249

### Available Sizes

**Size:** 5mg

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg

### Specifications

**CAS No:**
1190378-57-4

**Formula:**
$C_{26}H_{36}N_6O_2$

**Pathway:**
Autophagy;Autophagy;NF-κB

**Target:**
ULK;Autophagy;IKK

**Purity / Grade:**
>98%

**Solubility:**
10 mM in DMSO

**Observed Molecular Weight:**
464.6

## Product Description

MRT67307 is a dual inhibitor of the **IKKε** and **TBK-1**, which mediates the phosphorylation of interferon regulatory factor 3 (IRF3),

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with **$IC_{50}$** values of 160 and 19 nM when assayed at 0.1 mM ATP in vitro, and also targets ULK1 and ULK2 with high potency ($IC_{50}$ values of 45 and 38 nM, respectively).

IC50 & Target: IC50: 160 nM (IKKε, ATP), 19 nM (TBK-1, ATP), 45 nM (ULK1), 38 nM (ULK2)

***In Vitro:*** MRT67307 actually enhances phosphorylation in IKKα$^{-/-}$ MEFs, the IL-1-stimulated phosphorylation of p105 at Ser$^{933}$ and RelA at both Ser$^{468}$ and Ser$^{536}$. MRT67307 also enhances IL-1-stimulated activation of NF-κB-dependent gene transcription in wild-type MEFs. Treatment of macrophages with MRT67307 leads to an increase in the poly(I:C)- and LPS-stimulated phosphorylation of p105 and RelA and enhanced NF-κB transcriptional activity[1]. MRT67307 (10 μM) is sufficient to reduce phospho-ATG13 to control levels, and in line with the in vitro $IC_{50}$ values, 10-fold less MRT68921 (1 μM) results in a similar reduction. MRT67307 and MRT68921 inhibit ULK and block autophagy in cells[2]. MRT67307 increases IL-10 production and suppresses proinflammatory cytokine production in macrophages. MRT67307 increases CREB-dependent gene transcription by promoting the dephosphorylation of CRTC3. MRT67307 does not inhibit the brain-specific kinases (BRSKs) and only inhibits the maternal embryonic leucine zipper kinase (MELK) and AMPK itself more weakly[3].