For Research Use Only

Resiquimod

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Catalog Number: CM00759

产品信息

Catalog Number:
CM00759

CAS号:
144875-48-9

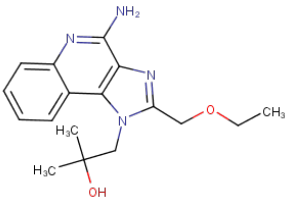
分子式:
$C_{17}H_{22}N_4O_2$

主要靶点:
HCV Protease|TLR

主要通路:
免疫与炎症|微生物学|蛋白酶体

分子量:
314.38

溶解度:
DMSO:59 mg/mL (187.7 mM),Ethanol:20 mg/mL (63.6 mM),H2O:<1 mg/mL



体外活性

Resiquimod induces the differentiation of myeloid-derived suppressor cells into dendritic cells and macrophages and may improve cancer immunotherapy by reducing immunosuppressive MDSCs. Resiquimod activates immune cells and induces proliferation of wild-type splenocytes via the Toll-like receptor 7 (TLR7)-MyD88-dependent signaling pathway [1]. Resiquimod also modulates dendritic cells to augment HIV-1- and cytomegalovirus-specific T cell responses [2].

体内活性

In wild-type mice, Resiquimod (50 nmol, i.p.) promotes increased serum concentrations of TNF-α, IFN-α, and IL-12, while neither MyD88-deficient mice nor TLR7-deficient mice show an increase in these cytokines [1]. In a murine model of allergic asthma, Resiquimod (i.n., 20 μg/mouse) reduces allergen-induced airway reactivity and inflammation via the reduction in Nrf2 signaling.

动物实验

Animal Models: Wild-type mice,TLR7-deficient mice,and MyD88-deficient mice. Formulation: saline. Dosages: 50 nmol. Administration: i.p.

细胞实验

Resiquimod is dissolved in DMSO. For inhibition of lysosomal acidification, cells are incubated with 10? μM CQ for 1?h before Resiquimod (R848) treatment. After treatment, 20? μL of 5?mg/mL MTT is added to the plate. The plate is incubated at 22°C for 4?h, and 200? μL dimethyl sulfoxide is added to the plate to dissolve the reduced formazan. The plate is then read at 490?nm with a microplate reader. To determine the effect of Myd88 inhibition on R848-induced cell proliferation, the Myd88 inhibitor Pepinh-MYD and the control peptide Pepinh-Control are added to PBL at the concentration of 50? μM, and the plate is incubated at 22°C for 6?h. After incubation, the cells are treated with R848 and subjected to MTT assay as above. To determine the effect of NF-κB inactivation on R848-induced cell proliferation, BAY-11-7082, an irreversible inhibitor of IκB-α phosphorylation, is added to the cells at the concentration of 1? μM, and the plate is incubated at 22°C for 1?h. After incubation, the cells are treated with R848 and subjected to MTT assay as earlier. All experiments are performed three times.

描述

Resiquimod is an imidazoquinoline amine and Toll-like receptor (TLR) agonist with potential immune response modifying activity. Resiquimod exerts its effect through the TLR signaling pathway by binding to and activating TLR7 and 8 mainly on dendritic cells, macrophages, and B-lymphocytes. This induces the nuclear translocation of the transcription activator NF-kB as well as activation of other transcription factors. This may lead to an increase in mRNA levels and subsequent production of cytokines, especially interferon-alpha (INF-a) and other cytokines, thereby enhancing T-helper 1 (Th1) immune responses. In addition, topical application of resiquimod appears to activate Langerhans' cells, leading to an enhanced activation of T-lymphocytes.

储存

Powder: -20°C for 3 years | In solvent: -80°C for 2 years