For Research Use Only

Baricitinib phosphate

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Catalog Number: CM04885

产品信息

Catalog Number:
CM04885

CAS号:
1187595-84-1

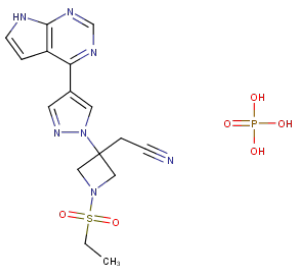
分子式:
$C_{16}H_{20}N_7O_6PS$

主要靶点:
JAK|Tyrosine Kinases

主要通路:
血管生成|JAK/STAT信号通路|蛋白酪氨酸激酶|表观遗传|干细胞

分子量:
469.41

溶解度:
DMSO:200 mM



靶点活性

JAK1:5.9 nM|JAK2:5.7 nM

体外活性

In cell-based assays, Baricitinib (INCB028050) proves to be a potent inhibitor of JAK signaling and function. In PBMCs, Baricitinib inhibits IL-6-stimulated phosphorylation of the canonical substrate STAT3 (pSTAT3) and subsequent production of the chemokine MCP-1 with IC50 values of 44 nM and 40 nM, respectively. In isolated naive T-cells, INCB028050 also inhibits pSTAT3 stimulated by IL-23 (IC50=20 nM). Importantly, this inhibition prevented the production of two pathogenic cytokines (IL-17 and IL-22) produced by Th17 cells-a subtype of helper T cells with demonstrable inflammatory and pathogenic properties-with an IC50 value of 50 nM. In stark contrast, the structurally similar but ineffective JAK1/2 inhibitors INCB027753 and INCB029843 has no significant effect in any of these assays systems when tested at concentrations up to 10 μM[1].

体内活性

Baricitinib (INCB028050) treatment, compares with vehicle, inhibits the increase in hind paw volumes during the 2 wk of treatment by 50% at a dose of 1 mg/kg and >95% at doses of 3 or 10 mg/kg. Because baseline paw volume measurements are taken on treatment day 0—in animals with significant signs of disease-it is possible to have >100% inhibition in animals showing marked improvement in swelling[1]. Baricitinib (0.7 mg/day) treated mice exhibits substantially reduced inflammation as assessed by H&E staining, reduced CD8 infiltration, and reduced MHC class I and class II expression when compared with vehicle-control treated mice. CD8+NKG2D+ cells, critical effectors of disease in murine and human alopecia areata (AA), are greatly diminished in Baricitinib treated mice compare with vehicle control treated mice[2].

细胞实验

Baricitinib(INCB 028050) is dissolved in stock solutions, and then diluted with appropriate media before use[1]. Human PBMCs are isolated by leukapheresis followed by Ficoll-Hypaque centrifugation. For the determination of IL-6-induced MCP-1 production, PBMCs are plated at 3.3×105 cells per well in RPMI 1640+10% FCS in the presence or absence of various concentrations of INCB028050 (1 nM, 10 nM, 100 nM, 1 μM, and 10 μM). Following preincubation with compound for 10 min at room temperature, cells are stimulated by adding 10 ng/mL human recombinant IL-6 to each well. Cells are incubated for 48 h at 37°C, 5% CO2. Supernatants are harvested and analyzed by ELISA for levels of human MCP-1. The ability of INCB028050 to inhibit IL-6-induced secretion of MCP-1 is reported as the concentration required for 50% inhibition (IC50). Proliferation of Ba/F3-TEL-JAK3 cells is performed over 3 d using Cell-Titer Glo[1].

描述

Baricitinib phosphate is a selective orally bioavailable JAK1/JAK2 inhibitor.

储存

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