

Product Data Sheet

Product Name: PF-07245303

Cat. No.: GC81322

Chemical Properties

Cas. No. 2655556-75-3

Formula $C_{25}H_{32}N_6O_2$

M.Wt 448.56

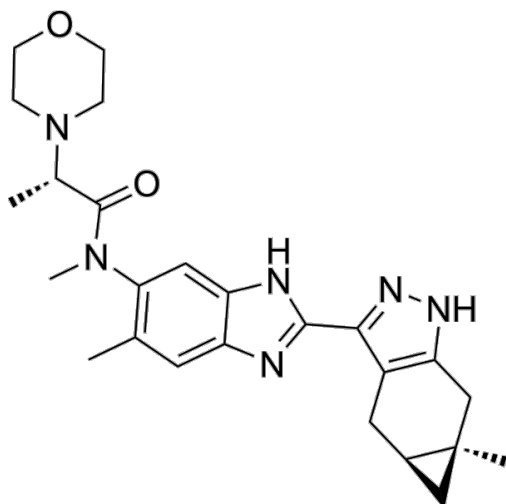
Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

PF-07245303 is a ITK / TRK inhibitor. PF-07245303 reduces the production of inflammatory cytokines such as IL-4 and IFN γ , and inhibits the phosphorylation of PLC γ 1. PF-07245303 inhibits nerve growth factor-induced basophil activation and the phosphorylation of TRKA. PF-07245303 reduces oxazolone-induced ear swelling in mouse ear tissues. PF-07245303 is applicable to research related to atopic dermatitis [1].

In Vivo, PF-07245303 (2%; topical administration; once daily) significantly reduces oxazolone-induced ear swelling, disease severity scores, and pro-inflammatory cytokine levels in mouse ear

Caution: Product has not been fully validated for medical applications. For research use only.

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tissue, with 43%-61% inhibition of ear thickness observed at multiple time points^[1].

In Vitro, PF-07245303 (0.49-40 nM; 60 s association phase, 60-480 s dissociation phase) binds potently to recombinant human ITK, TRKA, TRKB and TRKC proteins, with K_d values of 0.71 nM, 2.94 nM, 8.73 nM and 10 nM, respectively^[1]. PF-07245303 potently inhibits the enzymatic activity of full-length human ITK protein under the condition of 1 mM ATP, with an IC₅₀ of 5.62 nM^[1]. PF-07245303 (0-10 μM; 30 min pre-incubation, 5 min activation) potently inhibits ITK-dependent PLCγ1 phosphorylation in Jurkat T cells activated by anti-CD3/CD28, with an IC₅₀ of 154 nM^[1]. PF-07245303 potently inhibits IL-2 release from human primary CD4⁺ T cells activated by anti-CD3/CD28, with an IC₅₀ of 38.5 nM^[1]. PF-07245303 inhibits IL-2 release from human whole blood T cells activated by anti-CD3/CD28/CD2, with an IC₅₀ of 1350 nM (122 nM after protein binding correction)^[1]. PF-07245303 (20-24 h) inhibits the release of IL-4, IL-13, IFNγ, IL-17A and IL-10 from human primary CD4⁺ T cells activated by anti-CD3/CD28, with corresponding IC₅₀ values of 73.5 nM, 348 nM, 73.2 nM, 282 nM and 114.5 nM^[1]. PF-07245303 (6-7 days) inhibits cytokine release from differentiated human Th1, Th2 and Th17 cells, with IC₅₀ values of 35.4 nM, 60.9 nM and 12.5 nM against IFNγ, IL-13 and IL-17A, respectively^[1]. PF-07245303 potently inhibits IFNγ release from human primary CD8⁺ T cells activated by anti-CD3/CD28, with an IC₅₀ of 18.9 nM^[1]. PF-07245303 potently inhibits the enzymatic activities of the cytoplasmic domains of human TRKA, TRKB and TRKC, with mean IC₅₀ values of 7.2 nM, 12.0 nM and 20.7 nM, respectively, under 1 mM ATP conditions^[1]. PF-07245303 inhibits ligand-induced phosphorylation of human TRKA, TRKB and TRKC in U2OS cells (expressing p75), with IC₅₀ values of 72.6 nM, 48.7 nM and 21.7 nM, respectively^[1]. PF-07245303 inhibits NGF-induced activation of primary human blood basophils with an IC₅₀ of 442 nM (39.8 nM after protein binding correction)^[1]. PF-07245303 (0.1-10 μM; 24 h IL-4/IL-13 pre-treatment, 5 min NGF co-incubation) inhibits NGF-induced TRKA phosphorylation in human skin explants pre-treated with IL-4/IL-13^[1]. PF-07245303 (0.3-10 μM; 24 h) inhibits anti-CD3/CD28-induced IFNG, IL13 and IL2 mRNA expression in a concentration-dependent manner, with almost complete inhibition observed at 10 μM; meanwhile, this agent also suppresses IL-2 protein release, with significant inhibitory effects detected at 1, 3 and 10 μM^[1].

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References:

[1]. Duffen JL, et al. Discovery of an ITK and TRK kinase inhibitor for the potential topical treatment of atopic dermatitis. Nat Commun. Published online March 9, 2026.

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