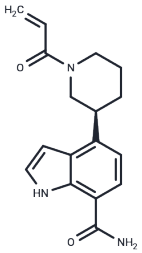
Data Sheet (Cat.No.T39130)

TargetMol

Elsubrutinib

Chemical Properties



CAS No. : 1643570-24-4

Formula: C17H19N3O2

Molecular Weight: 297.36

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Elsubrutinib (ABBV-105) is an orally active, selective, and irreversible BTK inhibitor with an IC50 of 0.18 μM for the catalytic domain of BTK, suitable for inflammation research.
Targets(IC50)	BTK
In vitro	Elsubrutinib exhibits an IC50 of 2.6 μM against BTK (C481S mutant), indicating that drug activity significantly decreases when the thiol nucleophile of the target is substituted by a hydroxyl group. This suggests that Cys481 plays a critical role in the mechanism by which Elsubrutinib inhibits BTK. Elsubrutinib irreversibly inhibits BTK enzymatic activity and blocks BTK-dependent cellular activation processes. Elsubrutinib suppresses histamine release from IgE-stimulated basophils and inhibits IL-6 release from IgG-stimulated monocytes, with these effects mediated by Fcε receptors and Fcγ receptors, respectively. Additionally, Elsubrutinib inhibits IgM-mediated B-cell proliferation, a process dependent on B-cell receptor signaling. Furthermore, Elsubrutinib inhibits TNF release from CpG-DNA-stimulated PBMCs, a process mediated by TLR9. However, it does not inhibit Toll-like receptor (TLR) functions independent of immunoreceptor tyrosine-based activation motif (ITAM) signaling, specifically showing no inhibitory effect on TNF release from PBMCs activated via TLR4 (lipopolysaccharide stimulation) or TLR7/8 (R848 stimulation). Elsubrutinib demonstrates significant inhibitory effects on IgM-mediated B-cell proliferation [1].
In vivo	After oral administration of Elsubrutinib at a dose of 10 mg/kg, the drug inhibited antibody responses to NP-Ficoll and NP-KLH in mice but showed no significant effect on antibody responses induced by NP-LPS or Prevnar-13 [1]. When Elsubrutinib was administered orally at doses ranging from 0.1-10 mg/kg, it dose-dependently suppressed paw swelling throughout the disease progression. At a dose of 10 mg/kg, whether administered once daily or twice daily, it significantly delayed the onset of proteinuria and prolonged the survival of mice, whereas lower doses did not exhibit notable inhibitory effects on these parameters [1]. The inhibitory effect of Elsubrutinib on the exacerbation of paw swelling exhibited an exposure-dependent characteristic. Additionally, Elsubrutinib dose-dependently and significantly suppressed bone loss, an effect consistent with the observed anti-inflammatory activity [1].

Solubility Information

Solubility	DMSO: 80.00 mg/mL (269.03 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3629 mL	16.8146 mL	33.6293 mL
5 mM	0.6726 mL	3.3629 mL	6.7259 mL
10 mM	0.3363 mL	1.6815 mL	3.3629 mL
50 mM	0.0673 mL	0.3363 mL	0.6726 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Goess C, et al. ABBV-105, a selective and irreversible inhibitor of Bruton's tyrosine kinase, is efficacious in multiple preclinical models of inflammation [published correction appears in Mod Rheumatol. 2019 May;29(3):v]. Mod Rheumatol. 2019;29(3):510-522.