

PLX5622

Chemical Properties

CAS No. : 1303420-67-8

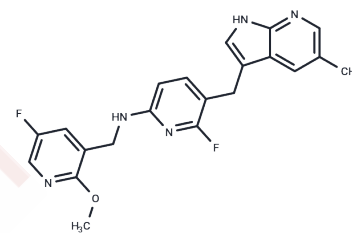
Formula: C₂₁H₁₉F₂N₅O

Molecular Weight: 395.41

Store at low temperature

Storage: 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	PLX5622 is an orally active small-molecule CSF1R inhibitor that selectively depletes microglia in the brains of mice and rats. It is commonly used to establish models related to microglia-associated neuroinflammation, neurodegenerative diseases (such as Alzheimer's disease and Parkinson's disease), brain injury, and neuroimmune regulation. This product is also available as a premixed diet version (C2005 PLX5622 in AIN-76A Diet (1200 ppm)), eliminating the need for self-preparation and offering superior stability and reproducibility.
Targets(IC50)	c-Fms, CSF-1R
In vitro	METHODS: CX CR1+/GFP mouse-derived mixed glial cell cultures were treated with PLX5622 (0.1-10 μ M) for 7 days and cell counts were assayed by Flow cytometry. RESULTS: Although there was a dose-dependent decrease in microglia numbers under PLX5622, no decrease in GFAP+ astrocytes was seen, but rather a gradual increase, along with a decrease in PDGFR- α OPC. [1] METHODS: Cerebellar sections prepared from PLP-eGFP mouse pups were treated with PLX5622 (1-20 μ M) for 3 days followed by Immunostaining. RESULTS: After three days of treatment, PLX5622 at concentrations greater than 2 μ M eliminated more than 95% of microglia. [2]
In vivo	METHODS: To study in vivo activity, PLX5622 (1200 mg/kg) was administered to PLP eGFP mice by feed for 7-21 days. RESULTS: PLX5622 was effective in depleting microglia in the central nervous system of adult mice. treatment with PLX5622 for 7 days had no effect on oligodendrocyte progenitor cell populations; however, a mild reduction was observed after 21 days in some central nervous system regions. [2]

Solubility Information

Solubility	DMSO: 65 mg/mL (164.39 mM), Sonication is recommended. ($<$ 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 7.9 mg/mL (19.98 mM), Suspension. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and</i>

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In vivo Formulation	<i>used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.529 mL	12.6451 mL	25.2902 mL
5 mM	0.5058 mL	2.529 mL	5.058 mL
10 mM	0.2529 mL	1.2645 mL	2.529 mL
50 mM	0.0506 mL	0.2529 mL	0.5058 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

- Garcia-Agudo LF, et al. Genetically induced brain inflammation by Cnp deletion transiently benefits from microglia depletion. *FASEB J.* 2019 Jul;33(7):8634-8647.
- Yu Z, Fang X, Liu W, et al. Microglia Regulate Blood-Brain Barrier Integrity via MiR-126a-5p/MMP9 Axis during Inflammatory Demyelination. *Advanced Science.* 2022: 2105442
- Li C, Wu H, Na H S T, et al. Neuronal-Microglial Liver X receptor β Activating Decrease Neuroinflammation and Chronic Stress-induced Depression-Related Behavior in Mice. *Brain Research.* 2022: 148112.
- Liu Y, et al. Concentration-dependent effects of CSF1R inhibitors on oligodendrocyte progenitor cells ex vivo and in vivo. *Exp Neurol.* 2019 Aug;318:32-41.
- Huang H Y, Chen Y Z, Zhao C, et al. Alternations in inflammatory macrophage niche drive phenotypic and functional plasticity of Kupffer cells. *Nature Communications.* 2024, 15(1): 9337.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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