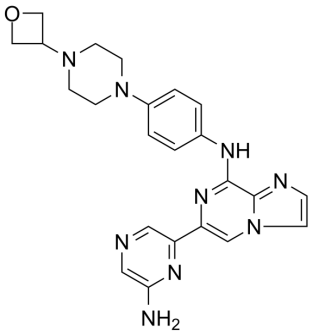
Lanraplenib



Cat. No.:	HY-109091
CAS No.:	1800046-95-0
Molecular Formula:	$C_{23}H_{25}N_9O$
Molecular Weight:	443.5
Target:	Syk
Pathway:	Protein Tyrosine Kinase/RTK
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month

SOLVENT & SOLUBILITY

In Vitro

DMSO : 20 mg/mL (45.10 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2548 mL	11.2740 mL	22.5479 mL
	5 mM	0.4510 mL	2.2548 mL	4.5096 mL
	10 mM	0.2255 mL	1.1274 mL	2.2548 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2 mg/mL (4.51 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2 mg/mL (4.51 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Lanraplenib (GS-9876) is a highly selective and orally active SYK inhibitor (IC_{50}=9.5 nM) in development for the treatment of inflammatory diseases. Lanraplenib (GS-9876) inhibits SYK activity in platelets via the glycoprotein VI (GPVI) receptor without prolonging bleeding time (BT) in monkeys or humans[1][2][3].

IC_{50} & Target

IC50: 9.5 nM (SYK)[1]

In Vitro

Lanraplenib (GS-9876) inhibits anti-IgM stimulated phosphorylation of AKT, BLNK, BTK, ERK, MEK, and PKCδ in human B cells with EC_{50} values of 24-51 nM. Lanraplenib (GS-9876) inhibits anti-IgM mediated CD69 and CD86 expression on B-cells (EC_{50}=112±10 nM and 164±15 nM, respectively) and anti-IgM /anti-CD40 co-stimulated B cell proliferation (EC_{50}=108±55 nM). In human macrophages, Lanraplenib (GS-9876) inhibits IC-stimulated TNFα and IL-1β release (EC_{50}=121±77 nM and 9±17 nM,

respectively)[1].
Lanraplenib (GS-9876) inhibits glycoprotein VI (GPVI)-induced phosphorylation of linker for activation of T cells and phospholipase Cγ2, platelet activation and aggregation in human whole blood, and platelet binding to collagen under arterial flow[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- bioRxiv. 2023 Mar 1.

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REFERENCES

[1]. Di Paolo J, et al. FRI0049 Preclinical Characterization of GS-9876, A Novel, Oral SYK Inhibitor That Shows Efficacy in Multiple Established Rat Models of Collagen-Induced Arthritis.Annals of the Rheumatic Diseases 2016;75:443-444.

[2]. Clarke AS, et al. Effects of GS-9876, a novel spleen tyrosine kinase inhibitor, on platelet function and systemic hemostasis. Thromb Res. 2018 Oct;170:109-118.

[3]. Kivitz AJ, et al. GS-9876, a Novel, Highly Selective, SYK Inhibitor in Patients with Active Rheumatoid Arthritis: Safety, Tolerability and Efficacy Results of a Phase 2 Study [abstract]. Arthritis Rheumatol.2018; 70 (suppl 10).

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