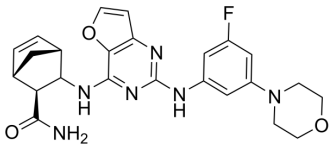
IRAK4-IN-18

Cat. No.:	HY-150732
Molecular Formula:	$C_{24}H_{25}FN_6O_3$
Molecular Weight:	464.49
Target:	IRAK
Pathway:	Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	IRAK4-IN-18 is a potent interleukin-1 receptor-associated kinase 4 (IRAK4) inhibitor with an IC_{50} value of 15 nM. IRAK4-IN-18 can inhibit LPS-induced IL23 production in THP and DC cells, and stop arthritis development in arthritis rats. IRAK4-IN-18 can be used for researching arthritis disease[1].
IC_{50} & Target	IRAK4 15 nM (IC_{50})
In Vitro	IRAK4-IN-18 (compound 33) has inhibitory activity against LPS-induced IL23 in THP and DC with IC_{50}s of 0.25 and 0.14 μM, respectively[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	IRAK4-IN-18 (5, 10 and 20 mg/kg; twice daily for 21 days) exhibits good efficacy in a mouse model for the inhibition of IL-6 production induced by IL-1β, and completely stops arthritis development in arthritis rats at 30 mg/kg[1]. IRAK4-IN-18 (1 mg/kg for IV, 5 mg/kg for PO, single dosage) exhibits a favorable pharmacokinetics profile with a clearance of 53 mL/min/kg and oral bioavailability of 38%[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Collagen-induced arthritis (CIA) rat models[1]
Dosage:	5, 10 and 20 mg/kg
Administration:	twice daily for 21 days
Result:	Completely stopped arthritis development based on hind paw clinical scores at 30 mg/kg dose, twice daily, and effectively decreased disease progression with 97% inhibition at 20 mg/kg dose, 56% inhibition at 10 mg/kg dose and 30% inhibition at 5 mg/kg dose.

REFERENCES

[1]. Chen Y, et al. Bicyclic pyrimidine compounds as potent IRAK4 inhibitors. Bioorg Med Chem Lett. 2022 Jul 18:128900.

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

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