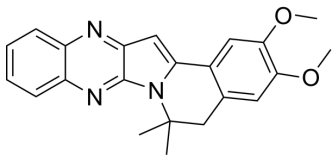
YM-90709

Cat. No.:	HY-19969
CAS No.:	163769-88-8
Molecular Formula:	$C_{22}H_{21}N_3O_2$
Molecular Weight:	359.42
Target:	Interleukin Related
Pathway:	Immunology/Inflammation
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (173.89 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7823 mL	13.9113 mL	27.8226 mL
	5 mM	0.5565 mL	2.7823 mL	5.5645 mL
	10 mM	0.2782 mL	1.3911 mL	2.7823 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: ≥ 2.08 mg/mL (5.79 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (5.79 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

YM-90709 is a novel IL-5 inhibitor which selectively blocks the binding of IL-5 to the IL-5 receptor (IL-5R).YM-90709 potently inhibits the binding of [^{125}I]-IL-5 to IL-5R on human peripheral eosinophils and eosinophilic HL-60 clone 15 cells with IC_{50} values of 1.0 and 0.57 μM[1].

IC_{50} & Target

IL-5

In Vitro

YM-90709 (0-100 μM;1 hour) inhibits the binding of [^{125}I]-IL-5 to IL-5R on human peripheral eosinophils and eosinophilic HL-60 clone 15 cells[1].

YM-90709 (0-100 μM; 96 hour; Eosinophilic HL-60 clone 15 cells) affects IL-5 and GM-CSF and prolonged the survival time of eosinophils[1].

YM-90709 (0-100 μM; 5 min; Eosinophilic HL-60 clone 15 cells) inhibits IL-5-induced, but not GM-CSF-induced, eosinophil survival as well as the tyrosine phosphorylation of Janus kinase 2[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Purified eosinophils were suspended at 5×10^5 cells/ml in RPMI-1640 medium.
Concentration:	0.01, 0.1, 1, 10 and 100 μM
Incubation Time:	96 hours
Result:	The survival time of eosinophils was prolonged.

Western Blot Analysis[1]

Cell Line:	Eosinophilic HL-60 clone 15 cells in RPMI-1640 medium containing 10% FBS, antibiotics, 50 mM 2-ME and 25 mM HEPPES.
Concentration:	
Incubation Time:	5 min
Result:	Reduced the IL-5-induced phosphorylation of JAK2 to near basal levels.

In Vivo

YM-90709 (0.01-10 mg/kg; intravenous injection, 72 hours, Inbred female Brown-Norway (BN) rats) results in the inhibition of antigen-induced infiltration of eosinophils and lymphocytes, but not neutrophils or monocytes, into the bronchoalveolar lavage fluid (BALF) of Brown-Norway (BN) rats[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Inbred female Brown-Norway (BN) rats and used at 4-6 weeks of age[2].
Dosage:	0.01, 0.1, 1, 10 mg/kg
Administration:	Intravenous injection; 72 hours
Result:	Inhibited WBC and eosinophil infiltration in a dose-dependent manner.

CUSTOMER VALIDATION

- Eur J Pharmacol. 2024 Jan 14:965:176331.

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REFERENCES

[1]. Morokata T, et al. Characterization of YM-90709 as a novel antagonist which inhibits the binding of interleukin-5 to interleukin-5 receptor. Int Immunopharmacol. 2002 Nov;2(12):1693-702.

[2]. Morokata T, et al. Effect of a novel interleukin-5 receptor antagonist, YM-90709, on antigen-induced eosinophil infiltration into the airway of BDF1 mice. Immunol Lett. 2005 Apr 15;98(1):161-5.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA