上海源叶生物科技有限公司
Shanghai yuanye Bio-Technology Co., Ltd
电话：021-61312973　　传真：021-55068248
网址：www.shyuanye.com
邮箱：shyysw@sina.com

产品名称：BMS-509744
产品别名：BMS-509744

生物活性：

Description	BMS-509744 is a potent, selective and ATP competitive Itk inhibitor with an IC50 of 19 nM.
IC_{50} & Target	IC50: 19 nM (Itk)[1]
In Vitro	BMS-509744 reduces T-cell receptor-induced functions including PLCγ1 tyrosine phosphorylation, calcium mobilization, IL-2 secretion, and T-cell proliferation in vitro in both human and mouse cells. BMS-488516 and BMS-509744 potently inhibit Itk in vitro with IC50 values of 96 and 19 nM, respectively. Both compounds exhibit competitive kinetics with respect to ATP, suggesting that they bind to the ATP binding site of the Itk kinase domain[1].
In Vivo	BMS-509744 and BMS-488516 suppress the production of IL-2 induced by anti-T-cell receptor antibody administered to mice. BMS-509744 exhibits a 50% inhibitory capacity when dosed at 50 mg/kg, irrespective of the amount of induction antibody. BMS-509744 also significantly diminishes lung inflammation in a mouse model of ovalbumin-induced allergy/asthma[1].

Solvent&Solubility

In Vitro:

DMSO： 21.9 mg/mL (35.11 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.6030 mL	8.0150 mL	16.0300 mL
	5 mM	0.3206 mL	1.6030 mL	3.2060 mL
	10 mM	0.1603 mL	0.8015 mL	1.6030 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: ≥ 2.5 mg/mL (4.01 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (4.01 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。

2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline)

Solubility: ≥ 2.5 mg/mL (4.01 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (4.01 mM，饱和度未知) 的澄清溶液。

	以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。
References	[1]. Lin TA, et al. Selective Itk inhibitors block T-cell activation and murine lung inflammation. Biochemistry.?2004 Aug 31;43(34):11056-62.

实验参考：

Animal Administration	Mice: Balb/c mice are injected subcutaneously with the compounds (BMS-509744 and BMS-488516) or vehicle (H2O:ethanol:Tween 80) 90:5:5) 15 min before intravenous administration of anti-CD3 antibody. Serum is collected for the analysis of IL-2 and compound levels at 90 min after anti-CD3 antibody administration. IL-2 is measured by ELISA, and compound levels are measured by mass spectrometry[1].
Kinase Assay	BMS-509744 activity (IC50) is determined by kinase assays. The kinase reactions are performed in the presence of 10 μM GST-SLP-76 and various concentrations of ATP for 10 min using 10 ng of enzyme. The concentrations of BMS-509744 [1]
References	[1]. Lin TA, et al. Selective Itk inhibitors block T-cell activation and murine lung inflammation. Biochemistry.?2004 Aug 31;43(34):11056-62.