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产品名称：BMS 309403
产品别名：BMS-309403

生物活性：

Description	BMS-309403 is a potent, selective and cell-permeable inhibitor of adipocyte fatty acid binding protein (FABP4) with a Ki of less than 2 nM, which exhibits Ki values of 250 nM for FABP3 and 350 nM for FABP5. BMS-309403 interacts with the fatty-acid-binding pocket within the interior of the protein and competitively inhibits the binding of endogenous fatty acids [1][2].
IC_{50} & Target	Ki: less than 2 nM (FABP4), 250 nM (FABP3), 350 nM (FABP5)[1]
In Vitro	BMS-309403 binds to FABP4 with high affinity and shows over 100-fold selectivity against FABP5 as well as the heart isoform FABP3[1]. BMS-309403 interacts with the fatty-acid-binding pocket within the interior of the protein and competitively inhibits the binding of endogenous fatty acids. Treatment with BMS-309403 significantly decreased MCP-1 production from THP-1 macrophages in a dose- and time-dependent manner[2]. BMS-309403 stimulates glucose uptake in C2C12 myotubes in a temporal and dose dependent manner via activation of AMP-activated protein kinase (AMPK) signaling pathway but independent of FABPs[3].
In Vivo	A 6 week treatment with BMS-309403 improves endothelial function, phosphorylated and total eNOS and reduced plasma triglyceride levels but does not affect endothelium-independent relaxations. In cultured human microvascular endothelial cells, lipid-induced A-FABP expression is associated with reduced phosphorylated eNOS and NO production and is reversed by BMS-309403[4]. The extent of atherosclerotic lesion area in the proximal aorta is significantly reduced in the BMS-309403-treated group compared with vehicle-treated controls in both the early and late intervention studies[2].
Solvent&Solubility	***In Vitro:*** **DMSO : 100 mg/mL** (**210.73 mM;** Need ultrasonic and warming) **H_2O : < 0.1 mg/mL** (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.1073 mL	10.5363 mL	21.0726 mL
5 mM	0.4215 mL	2.1073 mL	4.2145 mL
10 mM	0.2107 mL	1.0536 mL	2.1073 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 (5.27 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.27 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% corn oil Solubility: ≥ 2.5 mg/mL (5.27 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.27 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 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 玉米油中，混合均匀。
References	[1]. Sulsky R, et al. Potent and selective biphenyl azole inhibitors of adipocyte fatty acid binding protein (aFABP). Bioorg Med Chem Lett. 2007 Jun 15;17(12):3511-5. [2]. Furuhashi M, et al. Treatment of diabetes and atherosclerosis by inhibiting fatty-acid-binding protein aP2. Nature. 2007 Jun 21;447(7147):959-65. [3]. Lin W, et al. BMS309403 stimulates glucose uptake in myotubes through activation of AMP-activated protein kinase. PLoS One. 2012;7(8):e44570. [4]. Lee MY, et al. Chronic administration of BMS309403 improves endothelial function in apolipoprotein E-deficient mice and in cultured human endothelial cells. Br J Pharmacol. 2011 Apr;162(7):1564-76.

实验参考：

Animal Administration	Mice: To determine the effects of pharmacological inhibition of the actions of A-FABP, either the A-FABP inhibitor BMS-309403 (15 mg/kg) or vehicle (4% Tween 80) are administered chronically by daily oral gavage for 6 weeks in ApoE$^{-/-}$ mice (starting at weeks 12 of age). Mice are anaesthetized with a bolus injection of pentobarbitone sodium (230 mg/kg) and their aorta removed and dissected for further analysis[4].
References	[1]. Sulsky R, et al. Potent and selective biphenyl azole inhibitors of adipocyte fatty acid binding protein (aFABP). Bioorg Med Chem Lett. 2007 Jun 15;17(12):3511-5. [2]. Furuhashi M, et al. Treatment of diabetes and atherosclerosis by inhibiting fatty-acid-binding protein aP2. Nature. 2007 Jun 21;447(7147):959-65. [3]. Lin W, et al. BMS309403 stimulates glucose uptake in myotubes through activation of AMP-activated protein kinase. PLoS One. 2012;7(8):e44570. [4]. Lee MY, et al. Chronic administration of BMS309403 improves endothelial function in apolipoprotein E-deficient mice and in cultured human endothelial cells. Br J Pharmacol. 2011 Apr;162(7):1564-76.