产品名称：NSC 23766
产品别名：NSC 23766 trihydrochloride

生物活性：

Description	NSC 23766 trihydrochloride is an inhibitor of **Rac1** activation.
In Vitro	NSC 23766 (100 μM) treatment effectively inhibits polar body emission in a dose-dependent manner. NSC 23766 (200 μM) increases the percentage of morphologically abnormal spindles of oocytes. In NSC 23766-treated oocytes, the p-MAPK protein expression is significantly decreased[2]. NSC23766 (50 μM) plus 100 ng/mL Jagged1, GDF9 and BMP15, reduces the number of germLine cell cysts and increases the number of primordial follicles[3]. NSC23766 significantly inhibits GTP-Rac1 activity and phosphorylation of Rac1-PAK, ERKs and p38 MAPK in the spinal dorsal horn neurons[4].
In Vivo	NSC23766 (2.5 mg/kg/day, i.p.) significantly attenuates the onset of spontaneous diabetes in NOD mice, without significant effects on the growth (body weights) of the mice. NSC23766 significantly increases the expression of Rac1 and CHOP, a marker for ER-stress, in islets from NOD mice[1].
Solvent&Solubility	***In Vitro:*** **DMSO : 33.33 mg/mL** (**62.77 mM;** Need ultrasonic) **H_2O : ≥ 32 mg/mL** (**60.27 mM**) * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8834 mL	9.4169 mL	18.8338 mL
5 mM	0.3767 mL	1.8834 mL	3.7668 mL
10 mM	0.1883 mL	0.9417 mL	1.8834 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→ 90% (20% SBE-β-CD in saline)

Solubility: ≥ 2.5 mg/mL (4.71 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (4.71 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。

2.请依序添加每种溶剂： 10% DMSO →90% corn oil

Solubility: ≥ 2.5 mg/mL (4.71 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (4.71 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]. Veluthakal R, et al. NSC23766, a Known Inhibitor of Tiam1-Rac1 Signaling Module, Prevents the Onset of Type 1 Diabetes in the NOD Mouse Model. Cell Physiol Biochem. 2016;39(2):760-7. [2]. Song SJ, et al. Inhibition of Rac1 GTPase activity affects porcine oocyte maturation and early embryo development. Sci Rep. 2016 Oct 3;6:34415 [3]. Zhao L, et al. Rac1 modulates the formation of primordial follicles by facilitating STAT3-directed Jagged1, GDF9 and BMP15 transcription in mice. Sci Rep. 2016 Apr 6;6:23972 [4]. Wang Y, et al. Involvement of Rac1 signalling pathway in the development and maintenance of acute inflammatory pain induced by bee venom injection. Br J Pharmacol. 2016 Mar;173(5):937-50

实验参考：

Animal Administration	Balb/c control and NOD mice are at 7 weeks of age and are divided into four groups (n=8/group). At 8 weeks of age two groups of experimental animals (Balb/c and NOD) receive NSC23766 (2.5 mg/kg/day, i.p./daily) and other two groups, which serve as control Balb/c and NOD mice and receive equal volume of saline. The body weights and blood glucose are monitored every week for 34 weeks. [1]
Kinase Assay	Briefly, fresh spinal cord tissue of the lumbar enlargement is homogenised in the presence of protease and phosphatase inhibitors and lysed with buffer. After being centrifuged at 12,000× g for 5 min at 4°C, the supernatants are collected and incubated with PAK-PBD beads at 4°C on a rotator for 1 h and then the beads are pelleted through centrifugation at 5000× g for 3 min at 4°C. The resulting pellet is resuspended in LaemmLi buffer and boiled for 2 min. The bead samples are subjected to Western blot analysis. Total Rac1 in each sample is also determined by Western blot analysis. [4]
References	[1]. Veluthakal R, et al. NSC23766, a Known Inhibitor of Tiam1-Rac1 Signaling Module, Prevents the Onset of Type 1 Diabetes in the NOD Mouse Model. Cell Physiol Biochem. 2016;39(2):760-7. [2]. Song SJ, et al. Inhibition of Rac1 GTPase activity affects porcine oocyte maturation and early embryo development. Sci Rep. 2016 Oct 3;6:34415 [3]. Zhao L, et al. Rac1 modulates the formation of primordial follicles by facilitating STAT3-directed Jagged1, GDF9 and BMP15 transcription in mice. Sci Rep. 2016 Apr 6;6:23972 [4]. Wang Y, et al. Involvement of Rac1 signalling pathway in the development and maintenance of acute inflammatory pain induced by bee venom injection. Br J Pharmacol. 2016 Mar;173(5):937-50