产品名称：**8-甲酰基-4-甲基伞形酮**
产品别名：**4μ8C**

## 生物活性：

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| **Description** | 4μ8C (IRE1 Inhibitor III) is a small-molecule inhibitor of **IRE1α**. |
| **In Vitro** | When applies to the media of ER stressed cultured cells, 4μ8C (IRE1 Inhibitor III) inhibits Xbp1 splicing in a concentration-dependent manner. 4μ8C dissociates slowly from IRE1, but ishout of inhibitor leads to rapid recovery of Xbp1 splicing in cells[1].The IRE1 endoribonuclease inhibitor 4μ8c prevents the splicing of the XBP1 mRNA in response to ER stress caused by mutant proinsulin production[2]. The inositol-requiring enzyme 1α (IRE1α) is a serine-threonine kinase that plays crucial roles in activating the unfolded protein response. 4μ8C treatment dramatically inhibits IL-4 production by CD4+ T cells under Th0 conditions because both the IL-4 levels in the culture supernatant and the percentage of IL-4 positive cells are reduced by 4μ8C treatment. In addition, both IL-5 and IL-13 production are significantly reduced upon treatment with 4μ8C[3]. |
| **In Vivo** | 4μ8c (IRE1 Inhibitor III) (i.p. injection; 10 mg/kg/day for 4 more weeks) leads to a significant reduction (45.2%) in atherosclerotic lesion area in en face aorta preparations. 4μ8c can effectively mitigate plaque development in mice[4].<br>4μ8C (orally; 10, 50, or 100 mg/kg) suppresses passive cutaneous anaphylaxis (PCA) in mice (ED50 = 25.1 mg/kg)[5].<br>4μ8C reverses the ER stress-dependent loss of several known RIDD targets, with an EC50 of approximately 4 μM, approximating that of inhibition of XBP1 target gene activation[1]. |

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| **Animal Model:** | ApoE-/- mice[4] |
| **Dosage:** | 10 mg/kg |
| **Administration:** | I.p. injection; daily; for 4 more weeks |
| **Result:** | Led to a significant reduction (45.2%) in atherosclerotic lesion area in en face aorta preparations. |

**Solvent&Solubility**

***In Vitro:***

**DMSO : ≥ 27 mg/mL (132.24 mM)**

* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
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| | 1 mM | 4.8976 mL | 24.4882 mL | 48.9764 mL |
| | 5 mM | 0.9795 mL | 4.8976 mL | 9.7953 mL |
| | 10 mM | 0.4898 mL | 2.4488 mL | 4.8976 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。


[1]. Cross BC, et al. The molecular basis for selective inhibition of unconventional mRNA splicing by an IRE1-binding small molecule. Proc Natl Acad Sci U S A. 2012 Apr 10;109(15):E869-78.

[2]. Zhang L, et al. IRE1 inhibition perturbs the unfolded protein response in a pancreatic β-cell line expressing mutant proinsulin, but does not sensitize the cells to apoptosis. BMC Cell Biol. 2014 Jul

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| **References** | 10;15:29.<br>[3]. Kemp K, et al. The serine-threonine kinase inositol-requiring enzyme 1α (IRE1α) promotes IL-4 production in T helper cells. J Biol Chem. 2013 Nov 15;288(46):33272-82.<br>[4]. Tufanli O, et al. Targeting IRE1 with small molecules counteracts progression of atherosclerosis. Proc Natl Acad Sci U S A. 2017 Feb 21;114(8):E1395-E1404.<br>[5]. Nam ST, et al. Suppression of IgE-mediated mast cell activation and mouse anaphylaxis via inhibition of Sykactivation by 8-formyl-7-hydroxy-4-methylcoumarin, 4μ8C. Toxicol Appl Pharmacol. 2017 Oct 1;332:25-31. |