**4μ8C**

**Cat. No.**: HY-19707  
**CAS No.**: 14003-96-4  
**Molecular Formula**: C₁₁H₈O₄  
**Molecular Weight**: 204.18  
**Target**: IRE1  
**Pathway**: Cell Cycle/DNA Damage

**Storage**  
- Powder  
  -20°C  3 years  
  4°C  2 years  
- In solvent  
  -80°C  6 months  
  -20°C  1 month

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**Solvent & Solubility**

**In Vitro**  
DMSO : ≥ 27 mg/mL (132.24 mM)  
*“≥” means soluble, but saturation unknown.*

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass 1 mg</th>
<th>Mass 5 mg</th>
<th>Mass 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>4.8976 mL</td>
<td>24.4882 mL</td>
<td>48.9764 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.9795 mL</td>
<td>4.8976 mL</td>
<td>9.7953 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.4898 mL</td>
<td>2.4488 mL</td>
<td>4.8976 mL</td>
</tr>
</tbody>
</table>

Preparing Stock Solutions

Please refer to the solubility information to select the appropriate solvent.

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**BIOLOGICAL ACTIVITY**

**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 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 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].
### PROTOCOL

**Cell Assay** \(^{[2]}\)

INS-1 (Insulin 2 C96Y-GFP) cells (clone #4S2) cells are either left untreated or treated with 2 μg/mL doxycycline, 2 μg/mL doxycycline and 5 μM 4μ8C or 5 μM 4μ8C alone. After 48 h 50,000 cells/100 μL of media from each treatment well are seeded into a 96-well plate in duplicates. The CellTiter 96 AQueous Non-Radioactive Cell Proliferation Assay MTS is performed. The absorbance at 490 nm is then measured with a plate reader. \(^{[2]}\).

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

### REFERENCES

