

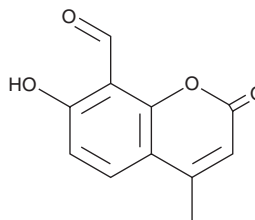
PRODUCT INFORMATION



4 μ 8C

Item No. 22110

CAS Registry No.: 14003-96-4
Formal Name: 7-hydroxy-4-methyl-2-oxo-2H-1-benzopyran-8-carboxaldehyde
Synonym: IRE1 Inhibitor III
MF: C₁₁H₈O₄
FW: 204.2
Purity: $\geq 98\%$
UV/Vis.: λ_{max} : 274 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

4 μ 8C is supplied as a crystalline solid. A stock solution may be made by dissolving the 4 μ 8C in the solvent of choice. 4 μ 8C is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of 4 μ 8C in these solvents is approximately 10, 25, and 30 mg/ml, respectively.

4 μ 8C is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 4 μ 8C should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 4 μ 8C has a solubility of approximately 0.1 mg/ml in a 1:8 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

4 μ 8C is an inhibitor of inositol requiring enzyme 1 α (IRE1 α), which is a protein located in the endoplasmic reticulum (ER) membrane that has kinase and RNase activities triggered by ER stress.¹ 4 μ 8C inhibits IRE1 α splicing of Xbp1 mRNA (IC_{50} = 6.8 μ M) and reduces subsequent gene expression of Erdj4 (IC_{50} = 3.4 μ M) in stress-cultured MEF cells but does not block IRE1 α autophosphorylation. It reduces IL-4 production in CD4⁺ T cells isolated from murine spleen and LPS-stimulated increases in TNF- α and IL-6 mRNA expression and protein secretion in isolated alveolar macrophages from patients with cystic fibrosis.^{2,3}

References

1. Cross, B.C., Bond, P.J., Sadowski, P.G., *et al.* The molecular basis for selective inhibition of unconventional mRNA splicing by an IRE1-binding small molecule. *Proc. Natl. Acad. Sci. USA* **109**(15), E869-878 (2012).
2. Kemp, K.L., Lin, Z., Zhao, F., *et al.* The serine-threonine kinase inositol-requiring enzyme 1 α (IRE1 α) promotes IL-4 production in T helper cells. *J. Biol. Chem.* **288**(46), 33272-33282 (2013).
3. Lubamba, B.A., Jones, L.C., O'Neal, W.K., *et al.* X-box-binding protein 1 and innate immune responses of human cystic fibrosis alveolar macrophages. *Am. J. Respir. Crit. Care Med.* **192**(12), 1449-1461 (2015).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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