

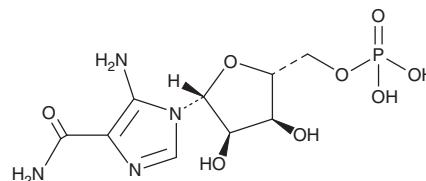
PRODUCT INFORMATION



AICA Ribonucleotide

Item No. 33907

CAS Registry No.: 3031-94-5
Formal Name: 5-amino-1-(5-O-phosphono-β-D-ribofuranosyl)-1H-imidazole-4-carboxamide
Synonyms: AICA-Ribotide, AICA-Riboside-5'-phosphate, 5-Aminoimidazole-4-Carboxamide Ribonucleotide, NSC 283955, NSC 292227
MF: C₉H₁₅N₄O₈P
FW: 338.2
Purity: ≥95%
UV/Vis.: λ_{max}: 269 nm
Supplied as: A 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

AICA ribonucleotide is supplied as a solid. Aqueous solutions of AICA ribonucleotide can be prepared by directly dissolving the solid in aqueous buffers. The solubility of AICA ribonucleotide in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

AICA ribonucleotide is a cell-permeable activator of AMP-activated protein kinase (AMPK).¹ It activates AMPK in a cell-free assay when used at concentrations ranging from 1 to 500 μM. AICA ribonucleotide (100-500 μM) inhibits lipolysis and lipogenesis in primary rat adipocytes. *In vivo*, AICA ribonucleotide (0.5 mg/kg) increases insulin sensitivity and prevents pancreatic β-cell damage in Zucker diabetic fatty rats.² AICA ribonucleotide (0.5 mg/kg) induces cardiac mobilization and myofibroblast differentiation of endogenous CD44⁺CD45⁻ mesenchymal stem cells (MSCs), as well as decreases cardiac scar formation, in an aged mouse model of myocardial infarction induced by left anterior descending artery (LAD) occlusion.³ Formulations containing AICA ribonucleotide have been used in the treatment and prevention of cardiac ischemic injury.

References

1. Sullivan, J.E., Brocklehurst, K.J., Marley, A.E., *et al.* Inhibition of lipolysis and lipogenesis in isolated rat adipocytes with AICAR, a cell-permeable activator of AMP-activated protein kinase. *FEBS Lett.* **353(1)**, 33-36 (1994).
2. Pold, R., Jensen, L.S., Jessen, N., *et al.* Long-term AICAR administration and exercise prevents diabetes in ZDF rats. *Diabetes* **54(4)**, 928-934 (2005).
3. Cieslik, K.A., Taffet, G.E., Crawford, J.R., *et al.* AICAR-dependent AMPK activation improves scar formation in the aged heart in a murine model of reperfused myocardial infarction. *J. Mol. Cell. Cardiol.* **63**, 26-36 (2013).

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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