

Revision 1

Store at -20C
#9944

AICAR

25 mg



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For Research Use Only. Not For Use In Diagnostic Procedures.

Background

AICAR (5-Aminoimidazole-4-carboxamide ribonucleoside) is an adenosine analog taken up by muscle and phosphorylated to form 5-aminoimidazole-4-carboxamide-1-β-D-ribofuranosyl-5'-monophosphate (ZMP), which stimulates AMPK activity and glucose transport in skeletal muscle (1). AICAR has been used in studies measuring glucose uptake, diabetes and insulin resistance, and energy regulation during exercise. AICAR acts by entering nucleoside pools and significantly increasing levels of adenosine during periods of ATP breakdown (2).

Molecular Formula

 $C_9H_{14}N_4O_5$

Molecular Weight

258.23 g/mol

Purity

>99%

CAS

2627-69-2

Solubility

Soluble in DMSO at 40mg/ml and H₂O at 20mg/ml.

Storage

Store solution at -20°C. Protect from light. Use within 12 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use:

This product is for **in vitro research use only** and is not intended for use in humans or animals. This product is not intended for use as therapeutic or in diagnostic procedures. AICAR is supplied as a lyophilized powder. For a 75mM stock, reconstitute the 25 mg in 1.29 ml sterile diH₂O. Heating to 37C and/or additional vortexing may be required. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 0.5-2mM for 30 minutes-24 hours.

Please note: Appearance of AICAR solution should be a clear to yellow/brown solution without precipitation. If precipitation is observed, warm tightly capped vial at 37C until AICAR goes into solution. Agitation of warmed solution by vortex may be necessary.

Background References

1. Sakoda, H. et al. (2002) *Am. J. Physiol. Endocrinol. Metab.* 282, E1239-E1244.
2. Mullane, K. et al. (1993) *Trends Cardiovasc Med* 3, 227-34.
3. Jakobsen, S. N. et al. (2001) *J. Biol. Chem.* 276, 46912-46916.
4. Jessen, N. et al. (2003) *J. Appl. Physiol.* 94, 1373-1379.
5. Giri, S. et al. (2004) *J. Neurosci.* 24, 479-487.

APPLICATIONS KEY

CROSS-REACTIVITY KEY H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr:

hosp: Rabbit All: all species expected

<https://www.cellsignal.com/datasheet.jsp?productId=9944&images=0&protocol=0>

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AICAR

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