

#9944 Store at -20°C

# AICAR

✓ 25 mg



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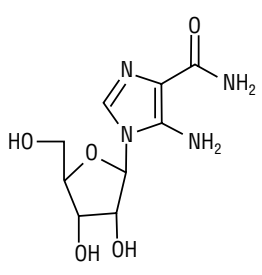
**For Research Use Only. Not For Use In Diagnostic Procedures.**

**Background:** AICAR (5-Aminoimidazole-4-carboxamide ribonucleoside) is an adenosine analog taken up by muscle and phosphorylated to form 5-aminoimidazole-4-carboxamide-1--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).

**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, 227-234.

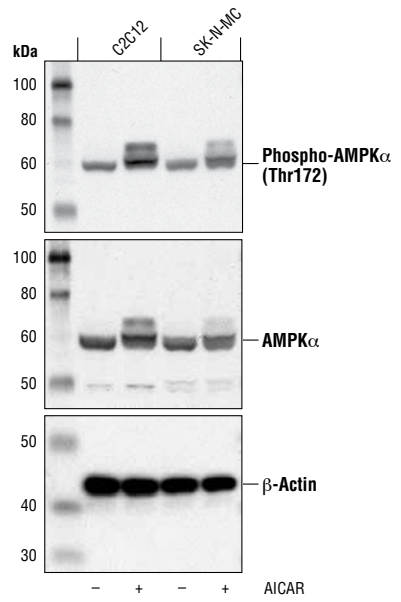
**Molecular Formula:** C<sub>9</sub>H<sub>14</sub>N<sub>4</sub>O<sub>5</sub>



**Molecular Weight:** 258.24 g/mol

**Solubility:** Soluble in water at 20 mg/ml

**Purity:** >99%



Western blot analysis of extracts from C2C12 cells and SK-N-MC, untreated (-) or treated with AICAR (+) at 2mM for 24 hours, using Phospho-AMPK $\alpha$  (Thr172)(40H9) Rabbit mAb #2535 (upper), AMPK $\alpha$  Antibody #2532 (middle), and  $\beta$ -Actin (D6A8) Rabbit mAb #8457 (lower).

**Storage:** Store lyophilized or in solution at -20°C, desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

**Directions for Use:** AICAR is supplied as a lyophilized powder. For a 75 mM stock, reconstitute the 25 mg in 1.29 ml sterile dH<sub>2</sub>O. Heating to 37°C 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 - 2 mM for 30 minutes - 24 hours.

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**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.