

## Product datasheet

# AICAR (Acadesine/AICA riboside), AMPK activator ab120358

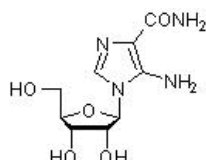
[16 References](#)   [3 Images](#)

### Overview

<b>Product name</b>	AICAR (Acadesine/AICA riboside), AMPK activator
<b>Description</b>	Cell-permeable activator of AMP-activated protein kinase
<b>Biological description</b>	Cell-permeable activator of AMP-activated protein kinase. Is taken up into cells by adenosine transporters and phosphorylated by adenosine kinase to the active nucleotide ZMP (5-aminoimidazole-4-carboxamide ribonucleoside), which mimics effects of AMP on the AMPK system. Active <i>in vivo</i> and <i>in vitro</i> .
	Also available in simple stock solutions ( <a href="#">ab146713</a> ) - add 1 ml of water to get an exact, ready-to-use concentration.

**CAS Number** 2627-69-2

### Chemical structure



### Properties

<b>Chemical name</b>	5-Amino-1-[(2 <i>R</i> ,3 <i>S</i> ,4 <i>R</i> ,5 <i>R</i> )-tetrahydro-3,4-dihydroxy-5-(hydroxymethyl)furan-2-yl]-1 <i>H</i> -imidazole-4-carboxamide
<b>Molecular weight</b>	258.23
<b>Molecular formula</b>	C <sub>9</sub> H <sub>14</sub> N <sub>4</sub> O <sub>5</sub>
<b>PubChem identifier</b>	17513
<b>Storage instructions</b>	Store at -20°C. Store under desiccating conditions. The product can be stored for up to 12 months.
<b>Solubility overview</b>	Soluble in water to 50 mM and in DMSO to 100 mM (with heating)
<b>Handling</b>	Wherever possible, you should prepare and use solutions on the same day. However, if you need to make up stock solutions in advance, we recommend that you store the solution as aliquots in tightly sealed vials at -20°C. Generally, these will be useable for up to one month. Before use, and prior to opening the vial we recommend that you allow your product to equilibrate to room

temperature for at least 1 hour.

Refer to SDS for further information

Need more advice on solubility, usage and handling? Please visit our [frequently asked questions \(FAQ\) page](#) for more details.

#### SMILES

NC(=O)c2ncn([C@@H]1O[C@H](CO)[C@H](O)[C@@H]1O)c2N

#### Source

Synthetic

### Applications

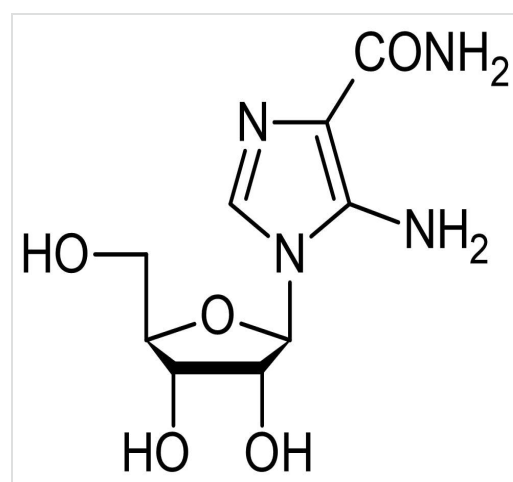
#### The Abpromise guarantee

Our [Abpromise guarantee](#) covers the use of ab120358 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

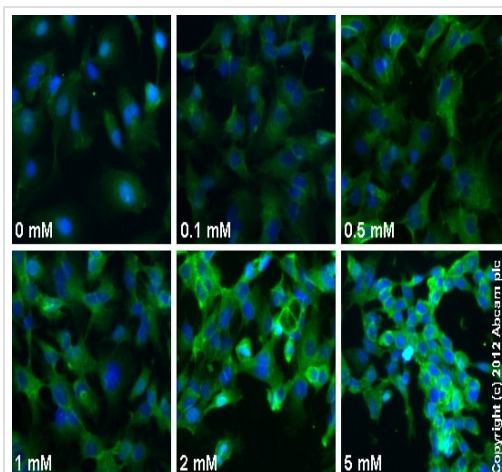
Application	Abreviews	Notes
Functional Studies		Use at an assay dependent concentration.

### Images



Chemical Structure - AICAR (Acadesine/AICA riboside), AMPK activator (ab120358)

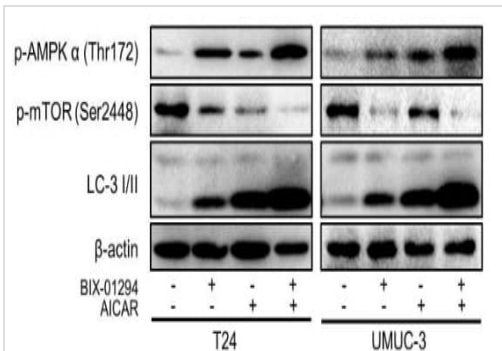
2D chemical structure image of ab120358, AICAR (Acadesine/AICA riboside), AMPK activator



Functional Studies - AICAR (Acadesine/AICA riboside), AMPK activator (ab120358)

**ab39400** staining AMPK alpha 1 (phospho S496) in HepG2 cells treated with AICAR (ab120358), by ICC/IF. Increase in AMPK alpha 1 (phospho S496) expression correlates with increased concentration of AICAR, as described in literature.

The cells were incubated at 37°C for 1h in media containing different concentrations of ab120358 (AICAR) in DMSO, fixed with 4% formaldehyde for 10 minutes at room temperature and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with **ab39400** (5 µg/ml) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight 488 goat anti-rabbit polyclonal antibody (**ab96899**) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.



Western blot - AICAR (Acadesine/AICA riboside), AMPK activator (ab120358)

Li F et al. PLoS One. 2015; 10(9): e0138390. doi: 10.1371/journal.pone.0138390 Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

T24 (transitional cell carcinoma) and UMUC-3 cells were pre-incubated with G9a activator AICAR (1mM, ab120358) for 4 h and then treated with BIX-01294 (1.5 µM) for 24h. The levels of p-AMPKα, p-mTOR and LC-3 I/II was examined.

Credit: Li F et al. PLoS One. 2015; 10(9): e0138390. doi: 10.1371/journal.pone.0138390

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