

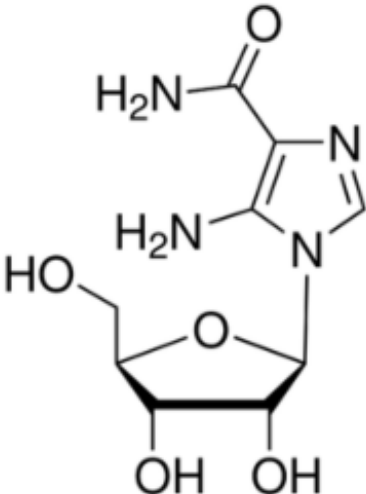
# AICAR

## SIH-402-10MG

### Overview

<b>Product Name</b>	AICAR Small Molecule
<b>Unit Size</b>	10mg
<b>Description</b>	Autophagy inducer
<b>Purity</b>	>99% (TLC); NMR (Conforms)

### Technical Data

<b>Alternative Name(s)</b>	N1-(β-D-Ribofuranosyl)-5-aminoimidazole-4-carboxamide
<b>Formula</b>	C <sub>9</sub> H <sub>14</sub> N <sub>4</sub> O <sub>5</sub>
<b>CAS#</b>	2627-69-2
<b>Molecular Weight</b>	258.2
<b>Chemical Structure</b>	
<b>Solubility</b>	Soluble to 75 mM in water and to 75 mM in DMSO.
<b>Source</b>	Synthetic
<b>Appearance</b>	Off-white solid.
<b>Storage Conditions</b>	-20°C; 1 year+
<b>Shipping Temperature</b>	Shipped Ambient
<b>SMILES</b>	[C@@H]2([N]1C=C(C(N)=O)N=C1N)O[C@H](CO)[C@H]([C@H]2O)O
<b>Research Area(s)</b>	Autophagy

### Biological Description

<b>Function</b>	<p>AICAR is an adenosine analog that when phosphorylated forms 5-aminoimidazole-4-carboxamide-1-D-ribofuranosyl-5'-monophosphate (ZMP) which proceeds to activate adenosine monophosphate-activated protein kinase (AMPK). This process in turn stimulates glucose uptake by skeletal muscle in an insulin-dependent manner. Autophagy is initiated by the UNC-51-like kinase 1/2 complex (ULK1 and ULK2). Under basal conditions, autophagy is negatively regulated due to the phosphorylation of ULK1 at serine-757 by mTORC1. During starvation, autophagy is positively regulated by ULK1/2 when it is phosphorylated at serine-555 and serine-777 by AMPK. Therefore, the activation of AMPK by AICAR, in turn will induce autophagy.</p> <ol style="list-style-type: none"> <li>Jhun B.S., et al. (2004) <i>Biochem Biophys Res Commun.</i> 318(2): 372-80.</li> <li>Huang H., et al. (2013) <i>Autophagy.</i> 9(2): 175-95.</li> </ol>
<b>Product Citations</b>	PubMed ID: N/A

# Material Safety Data Sheet

## AICAR SIH-402-10MG

This product is for *in vitro* research use only and is not intended for use in humans or animals

The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

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### Regulatory Information

Classification: D2B- Toxic Material Causing Other Toxic Effects, Moderate skin irritant, Moderate respiratory irritant, Moderate eye irritant

Safety Phrases:

S22 - Do not breathe dust.

S24/25 - Avoid contact with skin and eyes.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Hazard statements:

H315- Causes skin irritation.

H319- Causes serious eye irritation.

H335- May cause respiratory irritation.

Precautionary statements:

P261- Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264- Wash skin thoroughly after handling.

P271- Use only outdoors or in a well-ventilated area.

P280- Wear protective gloves/ eye protection/ face protection.

P302 + P352- IF ON SKIN: Wash with plenty of soap and water.

P304 + P340- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312- Call a POISON CENTER or doctor/ physician if you feel unwell.

P321- Specific treatment (see supplemental first aid instructions on this label).

P332 + P313- If skin irritation occurs: Get medical advice/ attention.

P337 + P313- If eye irritation persists: Get medical advice/ attention.

P362- Take off contaminated clothing and wash before reuse.

P403 + P233- Store in a well-ventilated place. Keep container tightly closed.

P405- Store locked up.

P501- Dispose of contents/ container to an approved waste disposal plant.

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### Physical Data

This product consists of powder, shipped at ambient temperatures. The physical properties of this product have not been investigated thoroughly. CAS Number: 2627-69-2

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### Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

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### Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

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### Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

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### Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

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#### **First Aid Measures**

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.