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AICA-Ribotide

National Cancer Institute

Source

National Cancer Institute. *AICA-Ribotide*. NCI Thesaurus. Code C113498.

A ribonucleotide analog of adenosine monophosphate that is an intermediate in the synthesis of inosine monophosphate with potential cardioprotective activity. During myocardial ischemia, AICA-ribotide activates AMP-dependent protein kinase (AMPK), inhibits adenosine deaminase (ADA) and causes increased synthesis of both adenosine and adenosine triphosphate (ATP). These activities prevent calcium overload, increase AMPK-dependent glucose uptake and improve blood flow to the heart. AMPK, a protein kinase complex, regulates several cellular systems including the uptake of glucose, the beta-oxidation of fatty acids, protein synthesis, and the biogenesis of both glucose transporter 4 (GLUT 4) and mitochondria. ADA is a key enzyme involved in purine metabolism.