AK4 phosphorylates (d)NMPs to (d)NDPs

D'Eustachio, P., Jassal, B.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of Creative Commons Attribution 4.0 International (CC BY 4.0) License. For more information see our license.

15/02/2021
Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references


Reactome database release: 75

This document contains 1 reaction (see Table of Contents)

https://www.reactome.org
AK4 phosphorylates (d)NMPs to (d)NDPs

Stable identifier: R-HSA-6788798

Type: transition

Compartments: mitochondrial matrix

Adenylate kinases (AKs) are nucleoside monophosphate kinases, which catalyze the phosphorylation of AMP by using ATP or GTP as phosphate donors. AKs are thus involved in maintaining the homeostasis of cellular nucleotides. CMP, dCMP and dAMP are other substrates phosphorylated with less efficiency by AKs. When GTP is the phosphate donor, only AMP and CMP are efficiently phosphorylated. Adenylate kinase 4 (AK4) can mediate nucleotide homeostasis in the mitochondrion (Panayiotou et al. 2010).

Literature references


Editions

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-07-27</td>
<td>Authored, Edited</td>
<td>Jassal, B.</td>
</tr>
<tr>
<td>2015-09-14</td>
<td>Reviewed</td>
<td>D'Eustachio, P.</td>
</tr>
</tbody>
</table>