

## Special Issue

# Adenylate Kinase in Human Health and Disease

### Message from the Guest Editor

ATP as energy currency is produced in glycolysis or oxidative phosphorylation, conveyed to energy consumption sites and used. Cellular energy metabolism and related enzymes have been evaluated as important biochemical matter. Adenylate kinase (AK) is an enzyme that regulates adenine nucleotide metabolism in a wide range of organisms, by catalyzing the interconversion reaction:  $\text{ATP} + \text{AMP} \rightleftharpoons 2 \text{ADP}$ . An efficient transfer mechanism of high-energy phosphate within the cell has been proposed; however, this mechanism is not fully elucidated. It is reported that AK deficiency is associated with disease. AK1 deficiency causes a hematological abnormality in humans, and AK2 deficiency in humans causes reticular dysgenesis and sensorineural deafness. In recent advances AK is reported to be related to hypoxia responses, aging, metastasis, cell stemness, differentiation, drug resistance, cancer progressive markers, etc. In this Special Issue, we aimed to address the energy metabolism and the importance of AK- or energy-metabolism-related enzymes such as creatine kinases or nucleoside diphosphate kinases in various life phenomena.

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### Deadline for manuscript submissions

closed (31 January 2024)



## International Journal of Molecular Sciences

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Impact Factor 4.9  
CiteScore 9.0  
Indexed in PubMed



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*International Journal of  
Molecular Sciences*  
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The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

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