CECRI deaminates Ade-Rib to Ino

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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.

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Literature references

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. ↗

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Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

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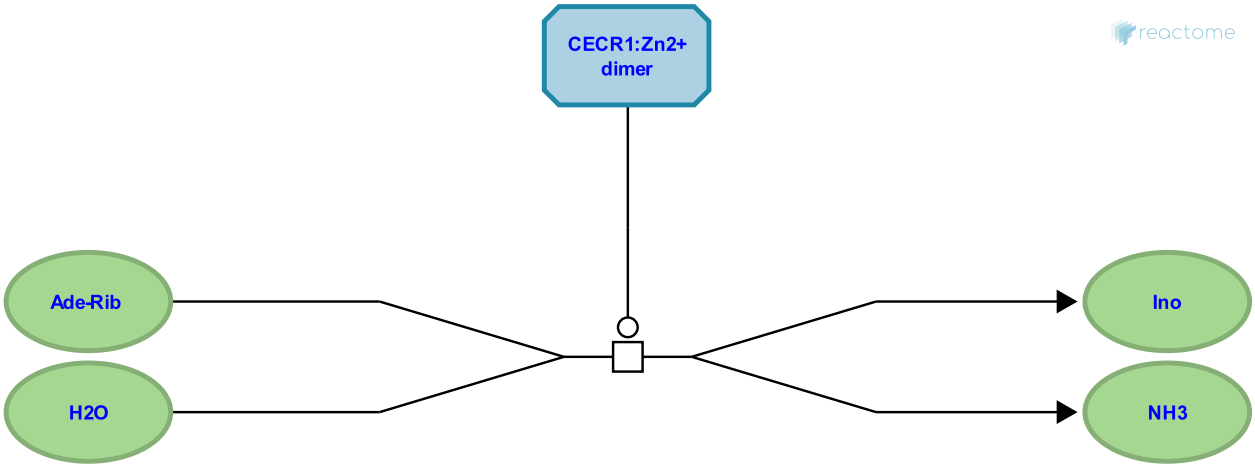
Stable identifier: R-HSA-5693346

Type: transition

Compartments: extracellular region



Adenosine deaminase (CECR1, ADA2) degrades extracellular adenosine (Ade-Rib), a signaling molecule that controls a variety of cellular responses (Zavialov & Engstrom 2005). Extracellular adenosine can bind and activate four adenosine receptors (ADRs), triggering multiple intracellular processes leading to either cell activation or in suppression of cell function and cell death. ADA2 (and ADA1) decrease the local concentration of adenosine by catalysing the deamination of adenosine to inosine (Ino). ADA2 is dimeric, binding one Zn2+ ion per subunit (Zavialov et al. 2010).

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Editions

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