

Adenosine turnover in GtoPdb v.2025.3

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Abstract

A multifunctional, ubiquitous molecule, [adenosine](#) acts at cell-surface G protein-coupled receptors, as well as numerous enzymes, including protein kinases and adenylyl cyclase. Extracellular adenosine is thought to be produced either by export or by metabolism, predominantly through ecto-5'-nucleotidase activity (also producing inorganic phosphate). It is inactivated either by extracellular metabolism *via* adenosine deaminase (also producing ammonia) or, following uptake by nucleoside transporters, *via* adenosine deaminase or adenosine kinase (requiring [ATP](#) as co-substrate). Intracellular adenosine may be produced by cytosolic 5'-nucleotidases or through S-adenosylhomocysteine hydrolase (also producing [L-homocysteine](#)).

Contents

This is a citation summary for Adenosine turnover in the [Guide to Pharmacology](#) database (GtoPdb). It exists purely as an adjunct to the database to facilitate the recognition of citations to and from the database by citation analyzers. Readers will almost certainly want to visit the relevant sections of the database which are given here under database links.

[GtoPdb](#) is an expert-driven guide to pharmacological targets and the substances that act on them. GtoPdb is a reference work which is most usefully represented as an on-line database. As in any publication this work should be appropriately cited, and the papers it cites should also be recognized. This document provides a citation for the relevant parts of the database, and also provides a reference list for the research cited by those parts. For further details see [\[12\]](#).

Please note that the database version for the citations given in GtoPdb are to the most recent preceding version in which the family or its subfamilies and targets were substantially changed. The links below are to the current version. If you need to consult the cited version, rather than the most recent version, please contact the GtoPdb curators.

Database links

Adenosine turnover

<https://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=248>

Introduction to Adenosine turnover

<https://www.guidetopharmacology.org/GRAC/FamilyIntroductionForward?familyId=248>

Enzymes

ADA(Adenosine deaminase)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1230>

ADK(Adenosine kinase)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1231>

NT5E(Ecto-5'-Nucleotidase)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1232>

SAHH(S-Adenosylhomocysteine hydrolase)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1233>

5'-nucleotidase IA

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1234>

5'-nucleotidase IB

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1235>

5'-nucleotidase II

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1236>

5'-nucleotidase III

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1237>

5'(3')-nucleotidase

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1238>

Mitochondrial 5'-nucleotidase

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1239>

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