

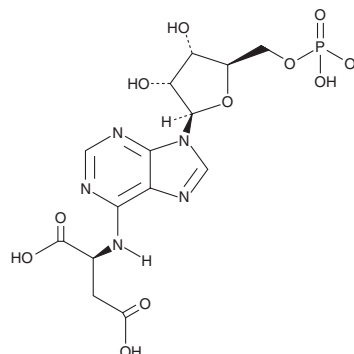
PRODUCT INFORMATION



Adenylosuccinic Acid

Item No. 29696

CAS Registry No.: 19046-78-7
Formal Name: N-[9-(5-O-phosphono-β-D-ribofuranosyl)-9H-purin-6-yl]-L-aspartic acid
Synonyms: S-Ado, Aspartyl Adenylate, Succinyl Adenosine, 5'-monophosphate, Succinyladenosine monophosphoric Acid, Succinyl AMP
MF: C₁₄H₁₈N₅O₁₁P
FW: 463.3
Purity: ≥95%
UV/Vis.: λ_{max}: 211, 267 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Adenylosuccinic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the adenylosuccinic acid in the solvent of choice, which should be purged with an inert gas. Adenylosuccinic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of adenylosuccinic acid in DMSO and DMF is approximately 20 mg/ml. Adenylosuccinic acid is slightly soluble in ethanol.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of adenylosuccinic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of adenylosuccinic acid in PB (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Adenylosuccinic acid is a purine nucleotide and an intermediate in the purine nucleotide cycle.¹ It is converted into adenosine 5'-monophosphate (AMP; Item No. 21094) and fumarate by adenylosuccinate lyase (ADSL) in the cytosol. Adenylosuccinic acid (10 μM) inhibits calcium-induced activation of non-selective cation channels in isolated rat brown adipocytes in a patch-clamp assay.² It induces contractions in isolated guinea pig uterus strips, which express adenosine receptors, when used at a concentration of 100 μM.³ Adenylosuccinic acid (10 μM) increases glucose-induced insulin exocytosis in INS-1 832/13 insulinoma cells.⁴ *In vivo*, adenylosuccinic acid (3,000 μg/ml in the drinking water) decreases muscle damage and pseudohypertrophy in a dystrophin-deficient *mdx* mouse model of Duchenne muscular dystrophy (DMD).⁵ Urine levels of adenylosuccinic acid are increased in patients with ADSL deficiency, an inborn error of metabolism characterized by various neurological symptoms, including intellectual disability and seizures, as well as respiratory failure.⁶

References

1. Waarde, A. *Biol. Rev. Camb. Philos. Soc.* **63**(2), 259-298 (1988).
2. Halonen, J. and Nedergaard, J. *J. Membr. Biol.* **188**(1), 183-197 (2002).
3. Nishida, Y. and Miyamoto, T. *Gen. Pharmacol.* **19**(2), 277-279 (1988).
4. Gooding, J.R., Jensen, M.W., Dai, X., et al. *Cell Rep.* **13**(1), 157-167 (2015).
5. Timpani, C.A., Goodman, C.A., Stathis, C.G., et al. *Sci. Rep.* **10**(1), 1125 (2020).
6. Donti, T.R., Cappuccio, G., Hubert, L., et al. *Mol. Genet. Metab. Rep.* **8**, 61-66 (2016).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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