Product Information

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Adenosine 5¢-(b,g-imido)triphosphate tetralithium salt hydrate

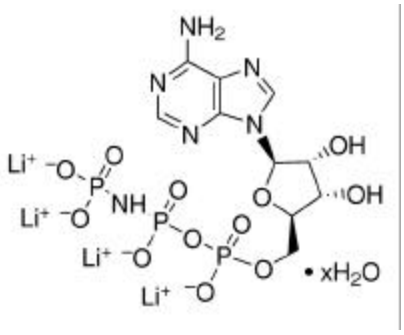
Product Numbers **A2647, 01910**
Storage Temperature –20 °C

CAS# 72957-42-7
Synonyms: AMP-PNP, App(NH)p, β,γ-Imidoadenosine 5'-Triphosphate; Adenylyl imidodiphosphate; ATP[β,γ-NH]

Product Description
5′-Adenylylimidodiphosphate (AMP-PNP) is a synthetically prepared non-hydrolyzable analog of adenosine 5'-triphosphate.[1] It is a competitive inhibitor of ATP-dependent enzyme systems.[2] AMP-PNP interacts strongly with heavy meromyosin, myosin and actomyosin and is a potent competitive inhibitor of heavy meromyosin ATPase.[3] It is also an inhibitor of mitochondrial F1-ATPase.[4]

The -NH group of the β-γ bridge of AMP-PNP allows this ATP analog to be an effective substrate for adenylate cyclase which cleaves the α-β linkage. The enzyme, which is normally membrane bound, may be assayed and characterized in the presence of the ubiquitous membrane phosphohydrolases.[1]

AMP-PNP, but not other nucleotides such as ADP, AMP, GTP or UTP, is reportedly able to induce permeabilization, comparable to that of ATP, in pancreatic Langerhans cells. This effect suggests that ATP hydrolysis is not required.[5]



Molecular formula: $C_{10}H_{13}Li_4N_6O_{12}P_3 \bullet xH_2O$

Formula weight: 529.93 (anhydrous)

Absorbance: λ_{max} = 259 nm (0.1 M phosphate buffer, pH 7.0)

E^{mM} (259 nm) = 15.4 (0.1 M phosphate buffer, pH 7.0)

Ratios: A_{250}/A_{260} = 0.80
A_{280}/A_{260} = 0.15

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

AMP-PNP is very unstable in acidic conditions. Solutions at low pH will rapidly hydrolyze to corresponding phosphoramidate and inorganic phosphate.[3]

Storage/Stability
Store at –20 °C.

Preparation Instructions
AMP-PNP is soluble in water at 50 mg/ml. A 10 mg/ml stock solution may be prepared, aliquoted, and stored at –70 °C for up to 3 months. Approximately 5% hydrolysis has been observed after 6 months.

References
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CEP,RBG,KTA 01/06-1