Product Information

Apyrase from potatoes

Catalog Number A7646
Storage Temperature –20 °C

CAS RN 9000-95-7
EC 3.6.1.5
Synonyms: Adenosine 5′-diphosphatase, Adenosine 5′-triphosphatase, ATP diphosphohydrolase

Product Description
Apyrase has adenosine 5′-triphosphatase (ATPase) and adenosine 5′-diphosphatase (ADPase) activities, where hydrolysis of the pyrophosphate bonds leads to sequential release of inorganic orthophosphate. At least two isoenzymes with different ATPase/ADPase ratios exist in different varieties of potato (Solanum tuberosum): 1, 2, 4, 5
  - ‘Pimpernel’ isoenzyme, with a high ATPase/ADPase ratio of ~10:1 and an isoelectric point (pl) of 8.74
  - ‘Desirée’ isoenzyme, with a low ATPase/ADPase ratio of ~1:1 and an isoelectric point (pl) of 6.69
These isozymes each have a molecular mass of ~49 kDa (gel filtration). 5 This product contains isoenzymes with both high and low ATPase/ADPase ratios.

Apyrase requires divalent metal ions for activity, with optimal activity observed with 5 mM Ca2+. For hydrolysis of organic di- and triphosphates, the optimal pH is 6.5. For inorganic substrates, the optimal pH is 5.1. 5

Preparation Instructions
This product is soluble in water at 10 mg/mL. One publication has reported preparation of 1,000 units/mL stock solutions in PBS. 6

Storage/Stability
Stock solutions at pH between 5–7.5 can be stored as frozen aliquots, such as in 30 mM HEPES, pH 7.2. 7
For enzyme solutions of <1 mg/ml, dissolve in HEPES buffer, pH 7.5, containing 1 mM MgCl₂, 1 mM DTT, 1 mM EDTA, and 1 mg/mL BSA. Repeated freeze-thaw cycles risk loss of activity. One publication indicates storage of 340 units/mL stock solutions of apyrase in calcium-free Tyrode’s buffer, at –20 °C, in single-use aliquots. 8

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

References

GCY,MES,NSB,CMH,RXR,MAM 12/16-1

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