Pyrophosphatase, inorganic from baker’s yeast (S. cerevisiae)

Product Number: I 1643
Storage Temperature: -0 °C

Product Description
Enzyme Commission (EC) Number: 3.6.1.1
CAS Number: 9024-82-2
Molecular Weight: 71 kDa
Extinction Coefficient: E\textsubscript{1%} = 14.5 (280 nm)
pI: 4.75
Synonyms: Inorganic Pyrophosphatase, PPi, Pyrophosphate phosphohydrolase

Inorganic pyrophosphatase from baker’s yeast is a homodimer consisting of two equal subunits of molecular weight 32-35 kDa.\textsuperscript{2,3}
Inorganic pyrophosphatase catalyzes the following reaction:

\[
\text{Pyrophosphate} + \text{H}_2\text{O} \rightarrow 2\text{- Orthophosphate}
\]

This ubiquitous enzyme serves to drive metabolic reactions that produce pyrophosphate, since these reactions typically have equilibrium constants near unity. The catalytic mechanism has been described in the literature.\textsuperscript{3} Inorganic pyrophosphatase is a metalloprotease that requires Mg\textsuperscript{2+} for maximal activity. Although the hydrolysis of inorganic pyrophosphate is specific in the presence of Mg\textsuperscript{2+}, both ADP and ATP can be hydrolyzed if zinc is present. The following metals can act as activators: Mg\textsuperscript{2+} > Zn\textsuperscript{2+} > Co\textsuperscript{2+} > Mn\textsuperscript{2+} > Ca\textsuperscript{2+}.\textsuperscript{2,3,4}

Inorganic pyrophosphatase from yeast is strongly inhibited by EDTA.\textsuperscript{4}

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
The lyophilized powder contains approximately 85% buffer salts (Tris, citric acid and magnesium chloride). This product is soluble in deionized water (2 mg/ml), yielding a clear and colorless solution.

Storage/Stability
A frozen solution containing Mg\textsuperscript{2+} is stable for at least one year at -20 °C.

References

TMG/RXR 12/03