Inorganic Pyrophosphatase (E.coli)

Cat. No. : RK20556

Product components

Components	Component number	Size-1 10 U	Size-2 100 U
Inorganic Pyrophosphatase (*E.coli*)	RM20534	100μL	1 mL

Product Description

Inorganic Pyrophosphatase (*E. coli*) was purified from a recombinant *E. coli* strain carrying the *E. coli* inorganic pyrophosphatase gene. It catalyzes the hydrolysis of inorganic pyrophosphates to produce orthophosphate: $P_2O_7^{4-}+H_2O+PPase \rightarrow 2HPO_4^{2-}$. The enzyme decomposes the byproduct PPi produced in the synthesis reaction of RNA and DNA, which can smoothly promotes the synthesis reaction. The decomposition process is a exergonic reaction that can facilitate conversion efficiency and product yield. Therefore, Inorganic Pyrophosphatase (*E. coli*) can be applied to reverse transcription reactions to increase RNA reverse transcription yield, as well as LAMP and HDA amplification to improve amplification efficiency.

Source

Inorganic Pyrophosphatase (*E.coli*) was recombinantly expressed in *Escherichia* coli.

Store

-20℃ for long-term storage

Storage Buffer

20 mM Tris-HCl (pH 8.0), 100 mM NaCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol @ 25°C

Unit Definition

One unit is the amount of enzyme that will generate 1 μmol of phosphate per minute from inorganic pyrophosphate under standard reaction conditions (a 10 minute reaction at 25°C in 100 mM Tris HCl [pH 8.0], 2 mM MgCl2, 2 mM PPi).

Transportation

Dry ice transportation

Application

1. Optimize RNA transcription: increases RNA yield in vitro transcription;

2. Remove PPi pollutants from reagents using pyrophosphate assay for SNP genotyping;

3. Promote the synthesis of proteins, RNA, and DNA;

4. Catalytic reaction: PPi+H2O → 2Pi;

5. Optimize PCR reaction: improves efficiency and increases DNA yield in PCR or multiple primer roll loop amplification;

6. Can be used as raw materials for mRNA vaccine production.

Precautions

1. This product can be directly added to reaction solution before starting reverse transcription and amplification reactions , with good activity in buffer containing Mg2+.

2. This product will greatly reduce its activity under high temperature conditions. When used in PCR reactions, this product can be added in advance for pre-incubation at 25 ℃ for 10 minutes to eliminate the influence of pyrophosphate on polymerase in the reaction solution.

3. For your safety and health, please wear laboratory clothes and disposable gloves for experiment operation.

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4.Enzyme volume needs to be optimized in different experiments, and the optimal reaction temperature is 25 ℃.

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