

For life science research only.  
Not for use in diagnostic procedures.



# Alkaline Phosphatase recombinant, highly active EIA Grade, from *Pichia Pastoris*

 **Version: 05**  
Content Version: June 2021

**Cat. No. 03 359 123 001**    10 mg  
500 µl

**Store the product at +2 to +8°C.**

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# 1. General Information

## 1.1. Contents

Vial / bottle	Label	Function / description	Content
1	Alkaline Phosphatase recombinant, highly active	<ul style="list-style-type: none"> <li>Ready-to-use solution in 3 M NaCl, pH 7.6, 5 mM magnesium chloride, 0.1 mM zinc chloride, 30 mM triethanolamine.</li> <li>Protein concentration: 20 mg/ml</li> </ul>	1 vial, 500 µl

## 1.2. Storage and Stability

### Storage Conditions (Product)

When stored at +2 to +8°C, the product is stable through the expiry date printed on the label.

Vial / bottle	Label	Storage
1	Alkaline Phosphatase recombinant, highly active	Store at +2 to +8°C. <b>⚠ Do not freeze.</b>

## 1.3. Additional Equipment and Reagent required

### For ELISA

- 4-Nitrophenyl phosphate (pNPP)\*

### For blotting and immunohisto/cytochemistry

- 5-Bromo-4-chloro-3-indolyl phosphate (BCIP\*)
- Fast Red tablets

### For labeling and detection of nucleic acids

- CDP-*Star*\*
- CDP-*Star*, ready-to-use\*

## 1.4. Application

Alkaline Phosphatase, recombinant can be coupled to other proteins via its amino or carbohydrate groups.

**i** For conjugation of Alkaline Phosphatase with IgG, use a ratio of 2.5:1.

- The conjugated enzyme can be used in a variety of applications, such as ELISA, microarrays, or western blotting.
- The enzyme solution in NaCl is ready-to-use and can be used without prior dialysis for coupling.

## Product Description

The recombinant, highly active Alkaline Phosphatase possesses the same amino acid sequence as the native, bovine-sourced Alkaline Phosphatase. The enzyme shows superb lot-to-lot consistency.

## 2. How to Use this Product

### 2.1. Before you Begin

#### Safety Information

No animal-derived components are used in the production process. This eliminates the risk of Bovine Spongiform Encephalopathy (BSE) or other infections caused by animals.

### 2.2. Parameters

#### Activator

Mg<sup>2+</sup>, Co<sup>2+</sup>, and Mn<sup>2+</sup> ions

#### Cofactors

Zn<sup>2+</sup> ions are essential for enzymatic activity.

#### EC-Number

EC 3.1.3.1

#### Inhibition

Alkaline Phosphatase is inhibited by:

- Inorganic phosphate
- Metal chelating agents
- Divalent heavy metal ions
- Amino acids, such as L-phenylalanine, L-tryptophane, L-cysteine
- Iodoacetamide

#### Molecular Weight

56 kDa determined by MALDI-TOF  
Homo-dimeric enzyme

#### pH Optimum

9.8 (activity)

#### pH Stability

8.0

#### Purity

≥95% (HPLC)

#### Specific Activity

≥7,000 U/mg. The enzyme activity is determined at +37°C in 1 M diethanolamine buffer, pH 9.8, with 4-nitrophenyl phosphate as substrate.

#### Specificity

Alkaline phosphatase catalyzes the hydrolysis of numerous phosphate esters, such as esters of primary and secondary alcohols, saccharides, cyclic alcohols, phenols, and amines.

- Phosphodiesterases do not react.
- The enzyme hydrolyzes inorganic pyrophosphate.
- The kinetic properties of the enzyme depend on many factors, such as purity of enzyme, concentration of enzyme in the assay, buffer, pH, etc.

## 3. Supplementary Information

### 3.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

#### Text convention and symbols

 **Information Note:** Additional information about the current topic or procedure.

 **Important Note:** Information critical to the success of the current procedure or use of the product.

① ② ③ etc. Stages in a process that usually occur in the order listed.

① ② ③ etc. Steps in a procedure that must be performed in the order listed.

\* (Asterisk) The Asterisk denotes a product available from Roche Diagnostics.

### 3.2. Changes to previous version

Layout changes.  
Editorial changes.

### 3.3. Ordering Information

Product	Pack Size	Cat. No.
Reagents, kits		
BCIP	3 ml, 150 mg	11 383 221 001
CDP- <i>Star</i>	1 ml	11 685 627 001
	2 x 1 ml	11 759 051 001
CDP- <i>Star</i> , ready-to-use	2 x 50 ml	12 041 677 001
4-Nitrophenyl Phosphate (pNPP)	custom fill	10 004 847 103
	0.5 kg package	10 004 847 101

### 3. Supplementary Information

#### 3.4. Trademarks

All product names and trademarks are the property of their respective owners.

#### 3.5. License Disclaimer

For patent license limitations for individual products please refer to:

**List of biochemical reagent products.**

#### 3.6. Regulatory Disclaimer

For life science research only. Not for use in diagnostic procedures.

#### 3.7. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

#### 3.8. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site.**

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

