Creative Enzymes®

Alkaline Phosphatase from Bovine, Recombinant

Cat. No. NATE-0061

Lot. No. (See product label)

Introduction

Description	Alkaline phosphatase (ALP, ALKP, ALPase, Alk Phos) (EC 3.1.3.1) is a hydrolase enzyme responsible for removing phosphate groups from many types of molecules, including nucleotides, proteins, and alkaloids. The process of removing the phosphate group is called dephosphorylation. As the name suggests, alkaline phosphatases are most effective in an alkaline environment. It is sometimes used synonymously as basic phosphatase.
Applications	Alkaline phosphatase is used for conjugation to antibodies and other proteins for ELISA, Western blotting, and hist ochemical detection. It is routinely used to dephosphorylate proteins and nucleic acids. It may be used for protein labeling when high sensitivity is required. Alkaline phosphatase may be also be used to dephosphorylate the 5′-termini of DNA or RNA to prevent self-ligation. DNA or RNA can also be tagged with radiolabeled phosphate (via T4 polynucleotide kinase) after dephosphorylation with alkaline phosphatase. This product has been used to dephosphorylate Dishevelled (Dvl) , which is a key component in the Wnt/β-catenin signaling pathway. An assay, using this ALP enzyme, was developed to assess the cryoprotective activity of two proteins CRP-1 and CRP-2. The enzyme has been used for inhibitory studies of cyclic nucleotide analogs that inhibit prostatic acid phosphatase using a fluorogenic assay. It is commonly used as a "reporter" in detection systems, in which it is conjugated to a protein (antibody, streptavidin, etc.) that specifically recognizes a target molecule. Alkaline phosphatase has also been used to dephosphorylate casein.
Synonyms	Alkaline phosphatase; ALP; ALKP; ALPase; Alk Phos; EC 3.1.3.1; Alkaline phosphomonoesterase; Glycerophosphatase; Phosphomonoesterase

Product Information

Species	Bovine
Source	Pichia pastoris
EC Number	EC 3.1.3.1
CAS No.	9001-78-9
Molecular Weight	apparent mol wt 160 kDa
Activity	> 4000 units/mg protein
Unit Definition	One DEA unit will hydrolyze 1 μmole of 4-nitrophenyl phosphate per minute at pH 9.8 at 37°C.

Storage and Shipping Information

Storage	2-8°C