

Native Bovine intestinal mucosa Alkaline Phosphatase

Product Information

Cat#	NATE-0053
Abbr	ALP, Native (Bovine)
Alias	ALP; ALKP
Similar	ALP
Species	Bovine
Source	Bovine intestinal mucosa
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 can be used to dephosphorylate casein and other proteins. 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. Alkaline phosphatase is used for conjugation to antibodies and other proteins for ELISA, Western blotting, and histochemical 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 study the monoclonal alkaline phosphatase-anti-alkaline phosphatase (APAAP) complex. High specific activity grade recommended for antibody and protein conjugation.
Product Overview	Bovine intestinal alkaline phosphatase is a dimeric, membrane-derived glycoprotein. At least three isoforms exist, which typically possess two N-linked and one or more O-

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linked glycans per monomer.² The enzyme requires zinc, and magnesium or calcium divalent ions for activity. Bovine intestinal alkaline phosphatase is a dimeric, membrane-derived glycoprotein. At least three isoforms exist, which typically possess two N-linked and one or more O-linked glycans per monomer.

Form	Freeze dried powder
Enzyme Commission Number	EC 3.1.3.1
Activity	> 2,000 units/mg protein
CAS No.	9001-78-9
Unit Definition	One DEA unit will hydrolyze 1 μ mole of 4-nitrophenyl phosphate per minute at pH 9.8 at 37°C. (One glycine unit is equivalent to ~3 DEA units)
Storage	2-8°C
Warnings	Package sizes are based on DEA units
Pathway	Endochondral Ossification, organism-specific biosystem (from WikiPathways) Folate biosynthesis, organism-specific biosystem (from KEGG) Folate biosynthesis, conserved biosystem (from KEGG) Metabolic pathways, organism-specific biosystem (from KEGG) TNF-alpha NF-kB Signaling Pathway, organism-specific biosystem (from WikiPathways)
Function	The peri-partum characteristics of serum bone-specific alkaline phosphatase (BAP) and urinary deoxypyridinoline (DPD) in dairy cattle are reported. Results indicate that the presence of glycosylphosphatidylinositol increases the stability of alkaline phosphatase against chemical denaturation while it decreases its refolding yield by the artificial chaperone refolding technique. Reliable and reproducible estimates of k (cat) and K (m) from only two or three progress curves were obtained using alkaline phosphatase. GPI-anchored proteins are localized on the outer layer of plasma membranes and clustered in microdomains generally called lipid rafts.
Synonyms	Alkaline phosphatase; ALP; ALKP; ALPase; Alk Phos; EC 3.1.3.1; Alkaline

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phosphomonoesterase; Glycerophosphatase; Phosphomonoesterase
