

**Anti-Alkaline Phosphatase Antibody**  
**Catalog # ABO10497****Specification**

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**Anti-Alkaline Phosphatase Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P05186</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for Alkaline phosphatase, tissue-nonspecific isozyme(ALPL) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-Alkaline Phosphatase Antibody - Additional Information**

**Gene ID** 249

**Other Names**

Alkaline phosphatase, tissue-nonspecific isozyme, AP-TNAP, TNSALP, 3.1.3.1, Alkaline phosphatase liver/bone/kidney isozyme, ALPL

**Calculated MW**

57305 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Rat, Mouse, By Heat<br>Western blot, 0.1-0.5 µg/ml, Human<br>

**Subcellular Localization**

Cell membrane ; Lipid-anchor, GPI-anchor .

**Protein Name**

Alkaline phosphatase, tissue-nonspecific isozyme(AP-TNAP/TNSALP)

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Thimerosal, 0.05mg NaN<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence at the N-terminus of human Alkaline Phosphatase(21-35aa,EKEKDPKYWRDQAQE), different from the related rat and mouse sequences by two amino acids.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins.

**Storage**

**At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.**

**Anti-Alkaline Phosphatase Antibody - Protein Information**

**Name** ALPL {ECO:0000303|PubMed:8406453, ECO:0000312|HGNC:HGNC:438}

**Function**

Alkaline phosphatase that metabolizes various phosphate compounds and plays a key role in skeletal mineralization and adaptive thermogenesis (PubMed:<a href="http://www.uniprot.org/citations/12162492" target="\_blank">12162492</a>, PubMed:<a href="http://www.uniprot.org/citations/23688511" target="\_blank">23688511</a>, PubMed:<a href="http://www.uniprot.org/citations/25982064" target="\_blank">25982064</a>). Has broad substrate specificity and can hydrolyze a considerable variety of compounds: however, only a few substrates, such as diphosphate (inorganic pyrophosphate; PPI), pyridoxal 5'-phosphate (PLP) and N- phosphocreatine are natural substrates (PubMed:<a href="http://www.uniprot.org/citations/12162492" target="\_blank">12162492</a>, PubMed:<a href="http://www.uniprot.org/citations/2220817" target="\_blank">2220817</a>). Plays an essential role in skeletal and dental mineralization via its ability to hydrolyze extracellular diphosphate, a potent mineralization inhibitor, to phosphate: it thereby promotes hydroxyapatite crystal formation and increases inorganic phosphate concentration (PubMed:<a href="http://www.uniprot.org/citations/23688511" target="\_blank">23688511</a>, PubMed:<a href="http://www.uniprot.org/citations/25982064" target="\_blank">25982064</a>). Acts in a non- redundant manner with PHOSPHO1 in skeletal mineralization: while PHOSPHO1 mediates the initiation of hydroxyapatite crystallization in the matrix vesicles (MVs), ALPL/TNAP catalyzes the spread of hydroxyapatite crystallization in the extracellular matrix (By similarity). Also promotes dephosphorylation of osteopontin (SSP1), an inhibitor of hydroxyapatite crystallization in its phosphorylated state; it is however unclear whether ALPL/TNAP mediates SSP1 dephosphorylation via a direct or indirect manner (By similarity). Catalyzes dephosphorylation of PLP to pyridoxal (PL), the transportable form of vitamin B6, in order to provide a sufficient amount of PLP in the brain, an essential cofactor for enzymes catalyzing the synthesis of diverse neurotransmitters (PubMed:<a href="http://www.uniprot.org/citations/20049532" target="\_blank">20049532</a>, PubMed:<a href="http://www.uniprot.org/citations/2220817" target="\_blank">2220817</a>). Additionally, also able to mediate ATP degradation in a stepwise manner to adenosine, thereby regulating the availability of ligands for purinergic receptors (By similarity). Also capable of dephosphorylating microbial products, such as lipopolysaccharides (LPS) as well as other phosphorylated small-molecules, such as poly-inosine:cytosine (poly I:C) (PubMed:<a href="http://www.uniprot.org/citations/28448526" target="\_blank">28448526</a>). Acts as a key regulator of adaptive thermogenesis as part of the futile creatine cycle: localizes to the mitochondria of thermogenic fat cells and acts by mediating hydrolysis of N-phosphocreatine to initiate a futile cycle of creatine dephosphorylation and phosphorylation (By similarity). During the futile creatine cycle, creatine and N-phosphocreatine are in a futile cycle, which dissipates the high energy charge of N-phosphocreatine as heat without performing any mechanical or chemical work (By similarity).

**Cellular Location**

Cell membrane; Lipid-anchor, GPI-anchor Extracellular vesicle membrane {ECO:0000250|UniProtKB:P09242}; Lipid- anchor, GPI-anchor {ECO:0000250|UniProtKB:P09242}. Mitochondrion membrane {ECO:0000250|UniProtKB:P09242}; Lipid-anchor, GPI-anchor {ECO:0000250|UniProtKB:P09242}. Mitochondrion intermembrane space

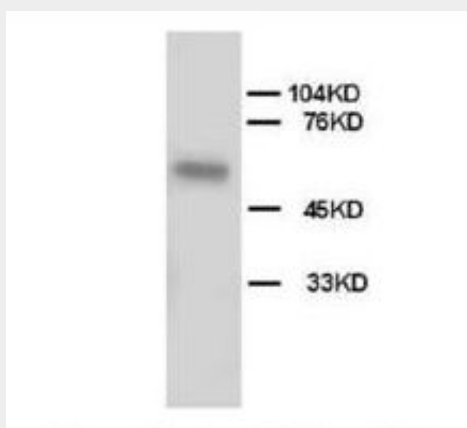
{ECO:0000250|UniProtKB:P09242}. Note=Localizes to special class of extracellular vesicles, named matrix vesicles (MVs), which are released by osteogenic cells. Localizes to the mitochondria of thermogenic fat cells: tethered to mitochondrial membranes via a GPI-anchor and probably resides in the mitochondrion intermembrane space {ECO:0000250|UniProtKB:P09242}

### Anti-Alkaline Phosphatase Antibody - Protocols

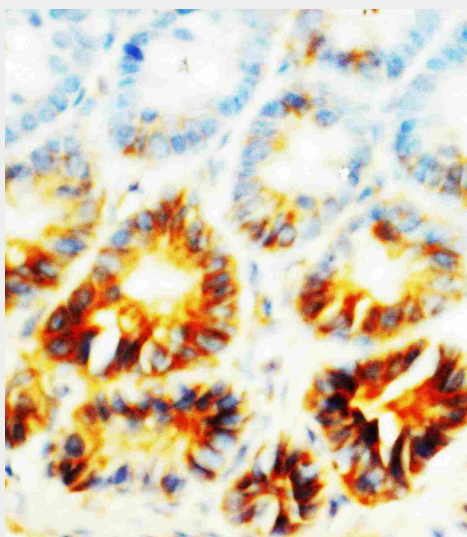
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### Anti-Alkaline Phosphatase Antibody - Images



Anti-Alkaline Phosphatase antibody, ABO10497, Western blotting All lanes: Anti ALPL (ABO10497) at 0.5ug/ml WB: HT1080 Whole Cell Lysate at 40ug Predicted bind size: 57KD Observed bind size: 57KD



Anti-Alkaline Phosphatase antibody, ABO10497, IHC(P)IHC(P): Rat Small Intestine Tissue

### **Anti-Alkaline Phosphatase Antibody - Background**

Alkaline phosphatase(ALPL) removes phosphate groups from the 5' end of DNA and RNA, and from proteins, at high pH. Most mammals have 4 different isozymes: placental, placental like, intestinal and non tissue specific(found in liver, kidney and bone). Tissues with particularly high concentrations of ALP include the liver, bile ducts, placenta, and bone. ALPL is the alkaline phosphatase of skin fibroblasts ,the tissue-nonspecific type, and that it is active toward millimolar concentrations of the putative natural substrates phosphoethanolamine(PEA) and pyridoxal-5-prime-phosphate(PLP). ALPL gene exists in single copy in the haploid genome and is composed of 12 exons distributed over more than 50 kb.Damaged or diseased tissue releases enzymes into the blood, so serum ALP measurements can be abnormal in many conditions, including bone disease and liver disease.