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Anti-Alkaline Phosphatase Antibody
Catalog # ABO10499

Specification

Anti-Alkaline Phosphatase Antibody - Product Information

Application	**WB**
Primary Accession	P05186
Host	**Rabbit**
Reactivity	**Human**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Alkaline phosphatase, tissue-nonspecific isozyme(ALPL) detection. Tested with WB in Human.

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
Western blot, 0.1-0.5 µg/ml, Human

Subcellular Localization
Cell membrane ; Lipid-anchor, GPI-anchor .

Protein Name
Alkaline phosphatase, tissue-nonspecific isozyme

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence at the N-terminus of human Alkaline Phosphatase(31-45aa DQAQETLKYALELQK), different from the related mouse and rat sequences by three 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:12162492, PubMed:23688511, PubMed:25982064). 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:12162492, PubMed:2220817). 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:23688511, PubMed:25982064). 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:2220817, PubMed:20049532). 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:28448526). 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

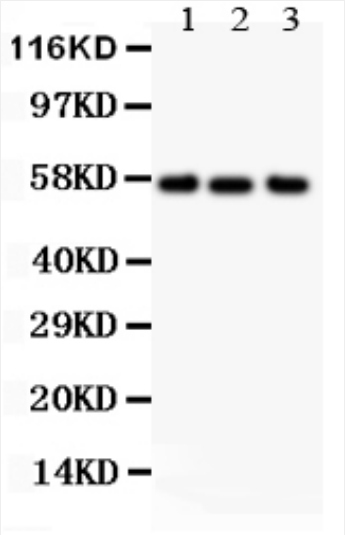
{ECO:0000250|UniProtKB:P09242}. Note=Localizes to special class of extracellular vesicles, named matrix vesicles (MVs), which are released by osteogenic cells. Localizes to the mitochondria of thermogenic fat cells: tethered to mitochondrial membranes via a GPI-anchor and probably resides in the mitochondrion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

Anti-Alkaline Phosphatase Antibody - Images



All lanes: Anti ALPL (ABO10499) at 0.5ug/mlLane 1: Human Placenta Tissue Lysate at 50ugLane 2: HT1080 Whole Cell Lysate at 40ugLane 3: JURKAT Whole Cell Lysate at 40ugPredicted bind size: 57KDObserved bind size: 57KD

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.