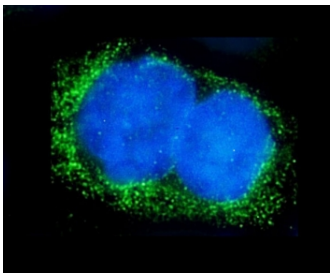
ALPL Antibody / Phosphate Metabolism Enzyme Antibody (RQ5701)

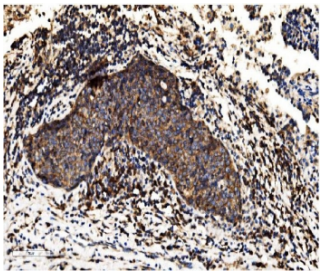
Catalog No.	Formulation	Size
RQ5701	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

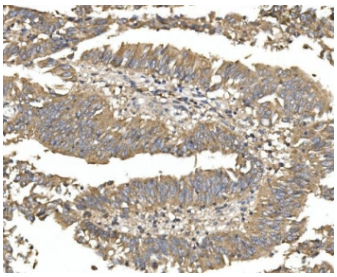
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P05186
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry: 1-2ug/ml Immunofluorescence: 2-4ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This ALPL Antibody / Phosphate Metabolism Enzyme Antibody is available for research use only.



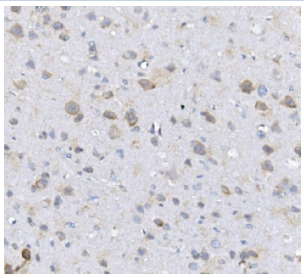
ALPL Antibody IF. Immunofluorescent staining of FFPE human A431 cells with ALPL Antibody / Phosphate Metabolism Enzyme Antibody demonstrates granular cytoplasmic and cell surface-associated green fluorescence consistent with alkaline phosphatase, tissue-nonspecific isozyme / ALPL localization in epithelial-derived tumor cells. Signal enrichment is observed along the peripheral cytoplasmic compartment surrounding DAPI-stained nuclei (blue), supporting expression of this phosphate metabolism-associated enzyme within metabolically active carcinoma cells. HIER: steam section in pH6 citrate buffer for 20 min.



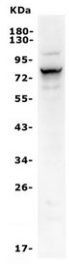
ALPL Antibody Lung Cancer IHC. Immunohistochemistry analysis of FFPE human lung carcinoma tissue stained with ALPL Antibody / Phosphate Metabolism Enzyme Antibody. Tumor epithelial cells demonstrate diffuse cytoplasmic and membranous HRP-DAB brown staining, while surrounding stromal and inflammatory cell populations show comparatively lower background reactivity. The staining pattern is consistent with expression of alkaline phosphatase, tissue-nonspecific isozyme / ALPL, a phosphate metabolism enzyme associated with epithelial differentiation and metabolic remodeling pathways in tumor tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



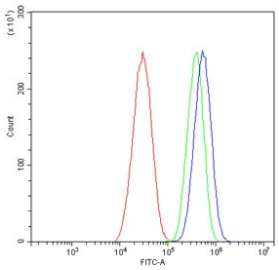
ALPL Antibody Rectal Cancer IHC. Immunohistochemistry analysis of FFPE human rectal carcinoma tissue stained with ALPL Antibody / Phosphate Metabolism Enzyme Antibody. Malignant gland-forming epithelial cells demonstrate strong apical membranous and granular cytoplasmic HRP-DAB brown staining, with prominent signal localized along luminal tumor surfaces and differentiated epithelial compartments. The staining profile is consistent with expression of alkaline phosphatase, tissue-nonspecific isozyme / ALPL, a phosphate metabolism enzyme involved in epithelial differentiation and extracellular phosphate regulation pathways. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



ALPL Antibody Rat Brain IHC. Immunohistochemistry analysis of FFPE rat brain tissue stained with ALPL Antibody / Phosphate Metabolism Enzyme Antibody. Scattered neuronal and glial-associated cellular populations demonstrate light to moderate cytoplasmic HRP-DAB brown staining against a low-background neuropil environment. The observed staining pattern is consistent with expression of alkaline phosphatase, tissue-nonspecific isozyme / ALPL, a phosphate metabolism enzyme implicated in extracellular phosphate regulation and neural tissue metabolic homeostasis. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



ALPL Antibody HEK293 WB. Western blot analysis of human HEK293 cell lysate using ALPL Antibody / Phosphate Metabolism Enzyme Antibody detects a prominent band at approximately 72-75 kDa, consistent with glycosylated forms of alkaline phosphatase, tissue-nonspecific isozyme / ALPL. The predicted molecular weight of ALPL is approximately 57 kDa, however the protein is commonly observed at higher apparent molecular weights due to extensive glycosylation and post-translational processing associated with this membrane-bound phosphate metabolism enzyme.



ALPL Antibody HepG2 FACS. Flow cytometry analysis of human HepG2 cells stained with ALPL Antibody / Phosphate Metabolism Enzyme Antibody demonstrates a distinct right-shifted fluorescence population relative to the isotype control, consistent with cell-associated expression of alkaline phosphatase, tissue-nonspecific isozyme / ALPL. This phosphate metabolism enzyme is associated with epithelial differentiation and extracellular phosphate regulation pathways in metabolically active cellular populations. Red=cells alone, Green=isotype control, Blue=ALPL antibody.

Description

Alkaline phosphatase, tissue-nonspecific isozyme (ALPL) is a membrane-associated phosphomonoesterase that regulates extracellular phosphate metabolism, pyrophosphate hydrolysis, and mineralization-associated signaling pathways. ALPL is widely expressed in osteoblasts, epithelial tissues, liver, kidney, lung, and gastrointestinal compartments, where it contributes to phosphate balance, cellular differentiation, and matrix remodeling biology. This ALPL Antibody is uniquely positioned for studies involving phosphate metabolism enzymes, epithelial differentiation

pathways, and mineralization-associated cellular programs.

ALPL antibody, also referred to as Tissue nonspecific alkaline phosphatase antibody, TNAP antibody, and TNSALP antibody in the literature, recognizes a glycosylphosphatidylinositol-anchored ectoenzyme encoded on chromosome 1p36.12. The protein is frequently described as liver/bone/kidney alkaline phosphatase because of its physiologic distribution across mineralizing and epithelial tissues. ALPL localizes primarily to the plasma membrane but may also demonstrate cytoplasmic staining patterns depending on tissue architecture and cellular differentiation state.

This ALPL Antibody supports investigation of phosphate metabolism and mineralization-related signaling pathways across multiple research applications including immunohistochemistry, western blot, immunofluorescence, and flow cytometry. Validation data include human lung carcinoma and rectal carcinoma tissue staining, cellular fluorescence localization studies, flow cytometric analysis, and western blot detection of tissue nonspecific alkaline phosphatase expression. The broad application profile supports use in studies examining epithelial biology, extracellular phosphate regulation, osteogenic signaling pathways, and tumor-associated metabolic adaptation.

ALPL plays a central role in hydrolysis of extracellular inorganic pyrophosphate, thereby promoting phosphate availability for hydroxyapatite formation and skeletal mineralization. The enzyme is strongly associated with osteoblast maturation and developmental mineralization programs, and altered ALPL activity is linked to hypophosphatasia and other disorders involving defective bone metabolism. In stem cell and developmental biology, tissue nonspecific alkaline phosphatase is widely utilized as a marker of osteogenic differentiation and lineage commitment.

In cancer research, ALPL expression has been investigated in relation to tumor-associated metabolic remodeling, epithelial differentiation state, and calcification-associated microenvironments. Increased alkaline phosphatase expression has been described in subsets of epithelial-derived tumors and may reflect altered phosphate handling, metabolic reprogramming, or differentiation-associated signaling pathways. Because ALPL expression spans epithelial and mineralization-associated tissues, the protein serves as a useful marker for studies integrating metabolism, differentiation biology, and tumor pathology.

ALPL Antibody may be incorporated into research involving phosphate metabolism enzymes, osteogenic differentiation pathways, extracellular matrix remodeling, epithelial tumor biology, mineralization disorders, and calcification-associated signaling mechanisms. The antibody supports investigations into tissue remodeling, developmental biology, cancer metabolism, and alkaline phosphatase-associated cellular regulation in both normal and diseased tissues.

For a clone-defined immunohistochemistry-focused ALPL reagent with extensive tumor tissue staining data, see our Alkaline Phosphatase Tissue Non Specific Antibody page featuring clone ALPL/597.

Application Notes

Optimal dilution of the ALPL Antibody / Phosphate Metabolism Enzyme Antibody should be determined by the researcher.

Immunogen

Amino acids KDPKYWRDQAQETLKYALELQ from the human protein were used as the immunogen for the ALPL antibody.

Storage

After reconstitution, the ALPL antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

ALPL antibody, TNAP antibody, TNSALP antibody, Tissue nonspecific alkaline phosphatase antibody, Liver bone kidney alkaline phosphatase antibody

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