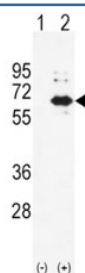


## Alkaline Phosphatase Antibody / ALPL (tissue-nonspecific) (F44129)

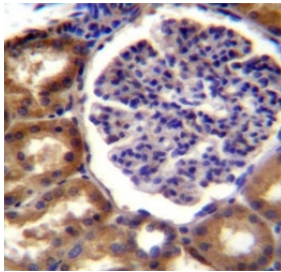
| Catalog No.   | Formulation                                | Size    |
|---------------|--------------------------------------------|---------|
| F44129-0.4ML  | In 1X PBS, pH 7.4, with 0.09% sodium azide | 0.4 ml  |
| F44129-0.08ML | In 1X PBS, pH 7.4, with 0.09% sodium azide | 0.08 ml |

[Bulk quote request](#)

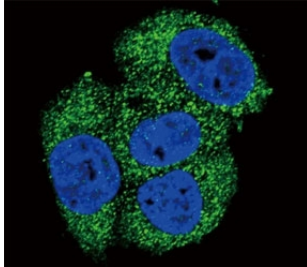
|                           |                                                                                                                     |
|---------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Availability</b>       | 1-3 business days                                                                                                   |
| <b>Species Reactivity</b> | Human, Mouse                                                                                                        |
| <b>Format</b>             | Purified                                                                                                            |
| <b>Host</b>               | Rabbit                                                                                                              |
| <b>Clonality</b>          | Polyclonal (rabbit origin)                                                                                          |
| <b>Isotype</b>            | Rabbit Ig                                                                                                           |
| <b>Purity</b>             | Purified                                                                                                            |
| <b>UniProt</b>            | P05186                                                                                                              |
| <b>Localization</b>       | Cell surface, cytoplasmic, secreted                                                                                 |
| <b>Applications</b>       | Western Blot : 1:1000<br>Immunofluorescence : 1:10-1:50<br>Flow Cytometry : 1:10-1:50<br>IHC (Paraffin) : 1:10-1:50 |
| <b>Limitations</b>        | This Alkaline Phosphatase antibody is available for research use only.                                              |



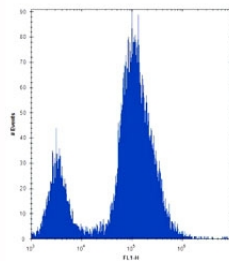
Western blot analysis of Alkaline Phosphatase antibody and 293 cell lysate (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (2) with the ALPL gene. Predicted molecular weight ~57 kDa, but can be observed at up to ~75 kDa due to glycosylation.



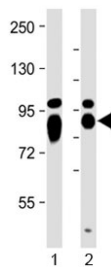
Alkaline Phosphatase antibody immunohistochemistry analysis in formalin fixed and paraffin embedded human kidney tissue.



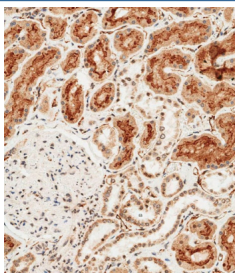
Alkaline Phosphatase Antibody MCF7 IF. Confocal immunofluorescent analysis of Alkaline Phosphatase antibody with MCF-7 cells followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green). DAPI was used as a nuclear counterstain (blue).



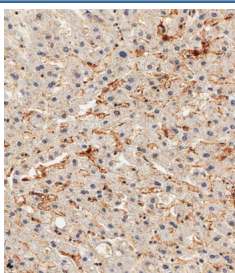
Alkaline Phosphatase antibody flow cytometric analysis of 293 cells (right histogram) compared to a negative control (left histogram). FITC-conjugated goat-anti-rabbit secondary Ab was used for the analysis.



Western blot testing of 1) human HeLa and 2) mouse F9 cell lysate with Alkaline Phosphatase antibody at 1:2000. Predicted molecular weight ~57 kDa, but can be observed at up to ~75 kDa due to glycosylation.



Alkaline Phosphatase Antibody Kidney Immunohistochemistry. IHC staining of FFPE human kidney tissue with Alkaline Phosphatase antibody. HIER: steam section in pH9 EDTA buffer for 20 min and allow to cool prior to staining.



Alkaline Phosphatase Antibody Kidney IHC. Immunohistochemistry staining of FFPE human kidney tissue with Alkaline Phosphatase antibody. HIER: steam section in pH9 EDTA buffer for 20 min and allow to cool prior to staining.

## Description

Alkaline Phosphatase antibody detects the tissue-nonspecific isozyme encoded by the ALPL gene, a membrane-bound metalloenzyme that hydrolyzes phosphate esters in a variety of tissues. The UniProt recommended name is Alkaline phosphatase, tissue-nonspecific isozyme (ALPL). This enzyme is part of the alkaline phosphatase family, which includes tissue-specific forms expressed in intestine, placenta, and germ cells, while the tissue-nonspecific isozyme is primarily found in liver, bone, and kidney.

Functionally, Alkaline Phosphatase antibody identifies an approximately 507-amino-acid glycoprotein localized to the plasma membrane through a glycosylphosphatidylinositol (GPI) anchor. The enzyme catalyzes the removal of phosphate groups from a wide range of substrates, including nucleotides, proteins, and alkaloids, with optimal activity at alkaline pH. In bone tissue, ALPL contributes to mineralization by hydrolyzing inorganic pyrophosphate, an inhibitor of hydroxyapatite formation, thereby promoting deposition of calcium phosphate. In the liver and kidney, ALPL facilitates phosphate turnover and bile excretion.

The ALPL gene is located on chromosome 1p36.12 and expresses a single protein that undergoes tissue-specific post-translational modifications, giving rise to distinct isoenzymes detectable by electrophoresis. Expression levels vary across developmental stages, with high activity observed in osteoblasts during bone growth and remodeling. Regulation of ALPL transcription involves multiple factors including Runx2, vitamin D, and parathyroid hormone, reflecting its close association with skeletal and mineral metabolism.

Pathologically, mutations in ALPL cause hypophosphatasia, an inherited metabolic bone disorder characterized by defective bone and tooth mineralization due to reduced enzymatic activity. The disease spectrum ranges from lethal perinatal forms to mild adult-onset presentations, depending on the residual activity of ALPL. Elevated serum levels of tissue-nonspecific alkaline phosphatase are observed in conditions involving increased osteoblastic activity such as bone fractures, osteosarcoma, and Paget's disease, while reduced levels may indicate hypophosphatasia or nutritional deficiencies in zinc or magnesium. Because of its central role in skeletal metabolism, ALPL serves as a key biochemical marker in clinical diagnostics and bone research.

Alkaline Phosphatase antibody is validated for use in relevant research applications to detect tissue-nonspecific ALPL protein and study its role in bone mineralization, hepatic function, and phosphate metabolism. NSJ Bioreagents provides ALPL antibody reagents optimized for bone biology, developmental, and enzymology research.

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

Titration of the Alkaline Phosphatase antibody may be required due to differences in protocols and secondary/substrate sensitivity.

## Immunogen

A portion of amino acids 217-246 from human ALPL was used as the immunogen for this tissue-nonspecific Alkaline Phosphatase antibody.

## Storage

Aliquot the Alkaline Phosphatase antibody and store frozen at -20°C or colder. Avoid repeated freeze-thaw cycles.

