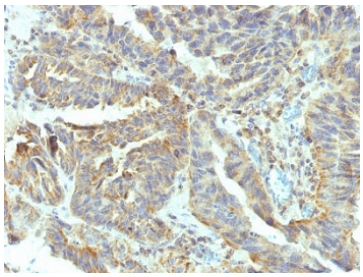
# ALPL Antibody / Alkaline Phosphatase (tissue-nonspecific) [clone V17.1] (V7411)

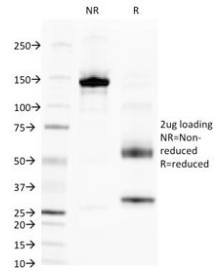
| Catalog No. | Formulation | Size |
|---|---|---|
| V7411-100UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide | 100 ug |
| V7411-20UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide | 20 ug |
| V7411SAF-100UG | 1 mg/ml in 1X PBS; BSA free, sodium azide free | 100 ug |
| V7411IHC-7ML | Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only* | 7 ml |

## Bulk quote request

| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Format** | Purified |
| **Host** | Mouse |
| **Clonality** | Monoclonal (mouse origin) |
| **Isotype** | Mouse IgG1, kappa |
| **Clone Name** | V17.1 |
| **Purity** | Protein G affinity chromatography |
| **UniProt** | P05186 |
| **Localization** | Cell surface, cytoplasmic, secreted |
| **Applications** | Flow Cytometry : 1-2ug/10^6 cells<br>Immunofluorescence : 1-3ug/ml<br>Immunohistochemistry : 1-2ug/ml for 30 min at RT |
| **Limitations** | This ALPL antibody is available for research use only. |



IHC testing of FFPE human ovarian carcinoma with ALPL antibody (clone V17.1). Required HIER: boil tissue sections in 10mM Tris with 1mM EDTA, pH 9, for 10-20 min followed by cooling at RT for 20 min.




SDS-PAGE analysis of purified, BSA-free ALPL antibody (clone V17.1) as confirmation of integrity and purity.

## Description

ALPL antibody detects Alkaline phosphatase, a membrane-bound metalloenzyme encoded by the ALPL gene that hydrolyzes phosphate esters in an alkaline environment. The UniProt recommended name is Alkaline phosphatase, tissue-nonspecific isozyme (ALPL). This enzyme is widely expressed in bone, liver, and kidney tissues and plays a central role in mineralization and phosphate metabolism. The clone V17.1 is a well-characterized monoclonal antibody that specifically recognizes an epitope on the tissue-nonspecific isoform of Alkaline phosphatase, providing high affinity and reproducibility across assays.

Functionally, Alkaline phosphatase catalyzes the removal of phosphate groups from nucleotides, proteins, and alkaloids, facilitating various physiological processes including skeletal mineralization, energy metabolism, and cellular differentiation. The enzyme's activity depends on zinc and magnesium cofactors, and its optimal function occurs under alkaline conditions. In bone, Alkaline phosphatase promotes hydroxyapatite formation by increasing local phosphate concentration, making it an essential biomarker for osteoblastic activity and bone formation.

The ALPL gene is located on chromosome 1p36.12 and encodes the tissue-nonspecific isoform (TNAP), which differs from other alkaline phosphatase isoenzymes such as the intestinal, placental, and germ cell types. Mutations in ALPL are responsible for hypophosphatasia, a rare inherited disorder characterized by defective bone and tooth mineralization. Detection of Alkaline phosphatase expression using ALPL antibody supports research into skeletal development, bone turnover, and metabolic bone diseases.

Clone V17.1 is a mouse monoclonal antibody widely used in immunohistochemistry, flow cytometry, and enzyme assays to identify Alkaline phosphatase in tissue sections and cell lysates. Its specificity for the tissue-nonspecific isoform allows reliable distinction between bone-related ALPL and other tissue-restricted alkaline phosphatases. The clone has been optimized for use in both paraffin-embedded and frozen tissue samples, offering consistent results in diagnostic and research settings. It is frequently used in studies involving osteoblast differentiation, bone regeneration, and hepatic function.

Structurally, Alkaline phosphatase is a homodimeric glycoprotein with each subunit containing an active site that coordinates metal ions essential for catalysis. The enzyme is anchored to the plasma membrane through a glycosylphosphatidylinositol (GPI) linkage, positioning it for extracellular phosphate metabolism. Research using ALPL antibody enables detailed analysis of bone formation markers, enzymatic regulation, and the pathological mechanisms underlying mineralization defects. NSJ Bioreagents provides ALPL antibody, clone V17.1, validated for use in relevant research applications

## Application Notes

Optimal dilution of the ALPL antibody should be determined by the researcher.

1. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

## Immunogen

Alkaline Phosphatase was used as the immunogen for the ALPL antibody.

## Storage

Store the ALPL antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).