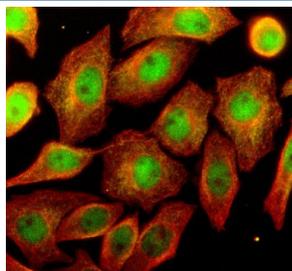


## OSTM1 Antibody / Osteopetrosis-associated transmembrane protein 1 (FY12777)

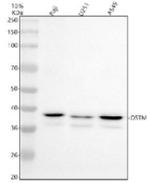
| Catalog No. | Formulation  | Size   |
|-------------|--|--------|
| FY12777     | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

[Bulk quote request](#)

|                           |   |
|---------------------------|---|
| <b>Availability</b>       | 1-2 days  |
| <b>Species Reactivity</b> | Human   |
| <b>Format</b>             | Lyophilized   |
| <b>Host</b>               | Rabbit  |
| <b>Clonality</b>          | Polyclonal (rabbit origin)  |
| <b>Isotype</b>            | Rabbit IgG  |
| <b>Purity</b>             | Immunogen affinity purified   |
| <b>Buffer</b>             | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na <sub>2</sub> HPO <sub>4</sub> . |
| <b>UniProt</b>            | Q86WC4  |
| <b>Localization</b>       | Nuclear, cytoplasmic  |
| <b>Applications</b>       | Western Blot : 0.25-0.5ug/ml<br>Immunocytochemistry/Immunofluorescence : 5ug/ml           |
| <b>Limitations</b>        | This OSTM1 antibody is available for research use only.                                   |



Immunofluorescent staining of OSTM1 using anti-OSTM1 antibody (green) and anti-Beta Tubulin antibody (red). OSTM1 was detected in an immunocytochemical section of human SIHA cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-OSTM1 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of OSTM1 using anti-OSTM1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Raji whole cell lysates, Lane 2: human U251 whole cell lysates, Lane 3: human whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-OSTM1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A strong band is detected near the expected ~37 kDa size, corresponding to the mature glycosylated form of OSTM1, along with a faint lower band around 35 kDa likely representing a partially processed species.

## Description

OSTM1 antibody detects Osteopetrosis-associated transmembrane protein 1, a lysosomal membrane protein essential for osteoclast function and bone resorption. Encoded by the OSTM1 gene on chromosome 6q21, this protein forms a complex with the chloride channel CLCN7, stabilizing its localization and activity within lysosomal and ruffled-border membranes. The OSTM1-CLCN7 complex is critical for acidification and ion exchange in osteoclasts, processes that drive bone matrix degradation and remodeling. Loss of OSTM1 function results in autosomal recessive osteopetrosis, characterized by dense but brittle bones and defective osteoclast activity.

OSTM1 contains a single transmembrane domain and a large luminal glycoprotein region that protects lysosomal membranes from degradation. It plays a dual role as a chaperone for CLCN7 and as a structural component of lysosomal and endosomal membranes. In addition to skeletal tissues, OSTM1 is expressed in neurons and immune cells, where it contributes to lysosomal biogenesis and degradation of cellular material. Its deficiency leads to impaired lysosomal trafficking, abnormal autophagy, and neurodegeneration.

The OSTM1 antibody is widely used in bone biology, lysosomal function, and neurodegeneration research to study protein trafficking, osteoclast activity, and lysosomal integrity. Western blot analysis identifies a 40-50 kilodalton band corresponding to glycosylated OSTM1, while immunofluorescence reveals punctate lysosomal localization that colocalizes with LAMP1 and CLCN7. This antibody supports detailed studies of lysosomal acidification, bone remodeling, and cellular degradation pathways.

Beyond osteoclast biology, OSTM1 influences autophagic flux and neuronal survival through regulation of lysosomal enzyme maturation and pH balance. The OSTM1 antibody provides an effective tool for exploring the cellular mechanisms underlying osteopetrosis, lysosomal storage disorders, and neurodegenerative diseases. NSJ Bioreagents offers this antibody validated for its applications, ensuring high specificity and reproducibility in lysosomal research.

## Application Notes

Optimal dilution of the OSTM1 antibody should be determined by the researcher.

## Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human OSTM1 was used as the immunogen for the OSTM1 antibody.

## Storage

After reconstitution, the OSTM1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

