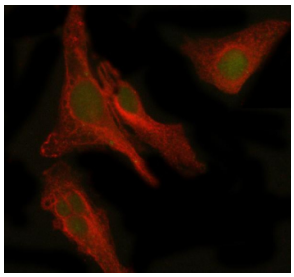
PEPD Antibody / Peptidase D (FY12654)

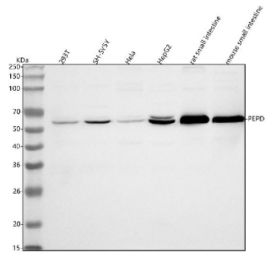
Catalog No.	Formulation	Size
FY12654	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

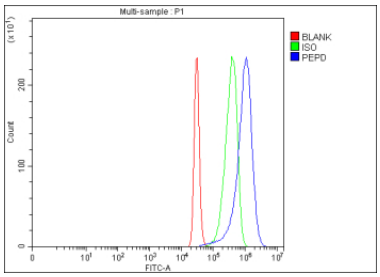
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P12955
Localization	Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This PEPD antibody is available for research use only.



Immunofluorescent staining of PEPD using anti-PEPD antibody (green) and anti-Beta Tubulin antibody (red). PEPD was detected in immunocytochemical section of human HELA cell. 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-PEPD 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 PEPD using anti-PEPD antibody. Lane 1: human 293T whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: human HepG2 whole cell lysates, Lane 5: rat small intestine tissue lysates, Lane 6: mouse small intestine tissue 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-PEPD 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 enhanced chemiluminescent. The expected molecular weight of PEPD is ~55 kDa.



Flow Cytometry analysis of 293T cells using anti-PEPD antibody. Overlay histogram showing 293T cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-PEPD antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Description

PEPD antibody detects Peptidase D, a cytosolic metalloprotease involved in the final step of collagen degradation and proline recycling. PEPD hydrolyzes dipeptides containing proline or hydroxyproline at the carboxy terminus, contributing to amino acid salvage and collagen turnover. The PEPD antibody is widely used in metabolism, connective tissue, and enzymology research to study peptide hydrolysis, collagen catabolism, and metabolic disorders.

PEPD is encoded by the PEPD gene located on human chromosome 19q13.11. The protein is approximately 493 amino acids long and requires manganese as a cofactor for catalytic activity. PEPD functions as a homodimer, with each subunit contributing to the active site. It is expressed in a wide range of tissues, particularly in the liver, kidney, and fibroblasts, where it facilitates collagen metabolism and amino acid homeostasis.

The PEPD antibody detects a 54 kilodalton band by western blot and shows cytosolic distribution under immunofluorescence microscopy. PEPD participates in proline recycling for collagen resynthesis, making it essential for connective tissue maintenance and wound healing. Mutations in PEPD cause prolidase deficiency, a rare metabolic disorder characterized by skin ulcers, developmental delay, and recurrent infections due to impaired collagen degradation and imbalanced proline metabolism.

In addition to its metabolic role, PEPD modulates cell signaling by acting as an extracellular ligand for epidermal growth factor receptor (EGFR), activating proliferative and survival pathways in response to tissue injury. It also influences immune responses by regulating proline-derived metabolites that affect macrophage activation and oxidative balance.

Because PEPD connects collagen metabolism, cell signaling, and tissue repair, it serves as an important target in research on fibrosis, wound healing, and metabolic disorders. NSJ Bioreagents provides a validated PEPD antibody optimized for its applications, supporting investigations into collagen turnover, amino acid metabolism, and regenerative biology.

Application Notes

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

Immunogen

E.coli-derived human PEPD recombinant protein (Position: R33-K493) was used as the immunogen for the PEPD antibody.

Storage

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