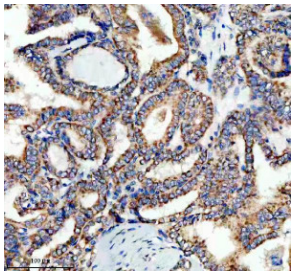
LARS2 Antibody / Mitochondrial Leucyl-tRNA Synthetase Antibody (FY13476)

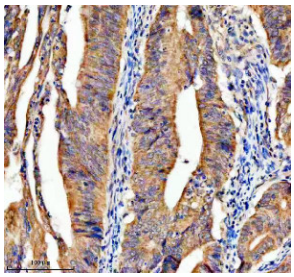
Catalog No.	Formulation	Size
FY13476	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

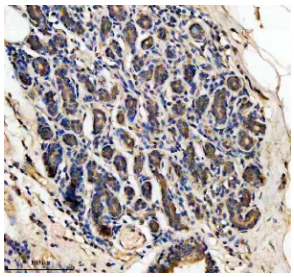
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q15031
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Immunofluorescence : 5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This LARS2 Antibody / Mitochondrial Leucyl-tRNA Synthetase Antibody is available for research use only.



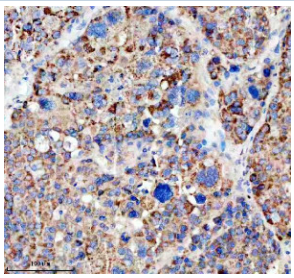
LARS2 Antibody Human Thyroid Cancer IHC. Immunohistochemical analysis of FFPE human thyroid cancer tissue using LARS2 Antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to incubation with the primary antibody at 2 ug/mL overnight at 4Â°C. An HRP-conjugated goat anti-rabbit secondary antibody with DAB chromogen was used for visualization. Strong granular cytoplasmic staining is observed throughout the neoplastic thyroid epithelial cells, consistent with the expected mitochondrial localization of leucyl-tRNA synthetase 2. These results demonstrate that LARS2 Antibody, a Mitochondrial Leucyl-tRNA Synthetase Antibody, specifically detects endogenous LARS2 in FFPE human thyroid cancer tissue.



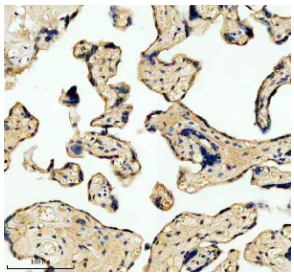
LARS2 Antibody Human Colon Cancer IHC. Immunohistochemical analysis of FFPE human colon cancer tissue using LARS2 Antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to incubation with the primary antibody at 2 ug/mL overnight at 4Â°C. An HRP-conjugated goat anti-rabbit secondary antibody with DAB chromogen was used for visualization. Strong diffuse granular cytoplasmic staining is observed throughout the neoplastic glandular epithelial cells, consistent with the expected mitochondrial localization of leucyl-tRNA synthetase 2. These results demonstrate that LARS2 Antibody, a Mitochondrial Leucyl-tRNA Synthetase Antibody, specifically detects endogenous LARS2 in FFPE human colon cancer tissue.



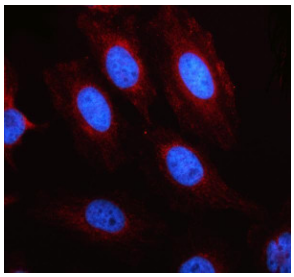
LARS2 Antibody Human Breast Cancer IHC. Immunohistochemical analysis of FFPE human breast cancer tissue using LARS2 Antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to incubation with the primary antibody at 2 ug/mL overnight at 4Â°C. An HRP-conjugated goat anti-rabbit secondary antibody with DAB chromogen was used for visualization. Moderate granular cytoplasmic staining is observed throughout the neoplastic epithelial cells, consistent with the expected mitochondrial localization of leucyl-tRNA synthetase 2. These results demonstrate that LARS2 Antibody, a Mitochondrial Leucyl-tRNA Synthetase Antibody, specifically detects endogenous LARS2 in FFPE human breast cancer tissue.



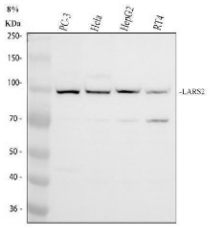
LARS2 Antibody Human Liver Cancer IHC. Immunohistochemical analysis of FFPE human liver cancer tissue using LARS2 Antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to incubation with the primary antibody at 2 ug/mL overnight at 4Â°C. An HRP-conjugated goat anti-rabbit secondary antibody with DAB chromogen was used for visualization. Moderate to strong granular cytoplasmic staining is observed throughout the tumor cells, consistent with the expected mitochondrial localization of leucyl-tRNA synthetase 2. These results demonstrate that LARS2 Antibody, a Mitochondrial Leucyl-tRNA Synthetase Antibody, specifically detects endogenous LARS2 in FFPE human liver cancer tissue.



LARS2 Antibody Human Placenta IHC. Immunohistochemical analysis of FFPE human placenta tissue using LARS2 Antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to incubation with the primary antibody at 2 ug/mL overnight at 4Â°C. An HRP-conjugated goat anti-rabbit secondary antibody with DAB chromogen was used for visualization. Moderate granular cytoplasmic staining is observed throughout the trophoblast cells, consistent with the expected mitochondrial localization of leucyl-tRNA synthetase 2. These results demonstrate that LARS2 Antibody, a Mitochondrial Leucyl-tRNA Synthetase Antibody, specifically detects endogenous LARS2 in FFPE human placental tissue.



LARS2 Antibody HeLa Cell IF. Immunofluorescent staining of HeLa cells using LARS2 Antibody. Cells underwent enzyme-mediated antigen retrieval for 15 minutes before incubation with LARS2 Antibody at 5 ug/mL overnight at 4Â°C. A Cy3-conjugated goat anti-rabbit secondary antibody was used to visualize LARS2 (red), while nuclei were counterstained with DAPI (blue). Diffuse punctate cytoplasmic staining with perinuclear enrichment is observed, consistent with the expected mitochondrial localization of leucyl-tRNA synthetase 2. These results demonstrate that LARS2 Antibody, a Mitochondrial Leucyl-tRNA Synthetase Antibody, specifically detects endogenous LARS2 in cultured human cells.



LARS2 Antibody Human Cancer Cell WB. Western blot analysis of LARS2 Antibody using lysates from 1) human PC-3 cells, 2) human HeLa cells, 3) human HepG2 cells, and 4) human RT4 cells. Samples (30 ug/lane) were separated on an 8% SDS-PAGE gel under reducing conditions, transferred to a nitrocellulose membrane, and detected with LARS2 Antibody at 0.5 ug/mL followed by an HRP-conjugated secondary antibody and ECL detection. A specific band is observed at approximately 102 kDa in all cell lines, consistent with the predicted molecular weight of LARS2. These results demonstrate that LARS2 Antibody, a Mitochondrial Leucyl-tRNA Synthetase Antibody, specifically detects endogenous LARS2 across multiple human cancer cell lines.

Description

LARS2 Antibody recognizes leucyl-tRNA synthetase 2 (LARS2), the mitochondrial enzyme responsible for attaching leucine to its cognate mitochondrial transfer RNA during mitochondrial protein synthesis. As a member of the aminoacyl-tRNA synthetase family, LARS2 ensures accurate translation of the 13 essential proteins encoded by mitochondrial DNA, all of which are critical components of the oxidative phosphorylation system. Proper LARS2 activity is therefore indispensable for mitochondrial respiration, ATP production, and cellular energy metabolism. Because of its central role in mitochondrial translation, LARS2 Antibody is widely used to investigate mitochondrial biology, protein synthesis, and respiratory chain function.

LARS2 functions within the mitochondrial matrix, where it catalyzes the ATP-dependent aminoacylation of mitochondrial transfer RNA for leucine, enabling precise decoding of mitochondrial messenger RNA during protein translation. Accurate charging of mitochondrial transfer RNAs is essential for maintaining respiratory complex assembly, electron transport chain activity, and mitochondrial homeostasis. Disruption of LARS2 function impairs mitochondrial protein synthesis, leading to reduced oxidative phosphorylation, altered cellular metabolism, and increased susceptibility to mitochondrial stress. Consequently, LARS2 Antibody has become an important research tool for studies of mitochondrial gene expression, organelle biogenesis, metabolic regulation, and cellular bioenergetics.

Pathogenic variants in the LARS2 gene have been associated with several inherited mitochondrial disorders, most notably Perrault syndrome, which is characterized by sensorineural hearing loss and ovarian dysfunction. Additional studies have linked impaired LARS2 activity to defects in mitochondrial translation, developmental abnormalities, and metabolic disease. Because mitochondrial dysfunction contributes to numerous neurological, cardiovascular, endocrine, and age-related disorders, LARS2 has emerged as an important target for investigating mechanisms of mitochondrial pathology. Researchers commonly employ LARS2 Antibody in Western blotting, immunohistochemistry, immunofluorescence, immunoprecipitation, and related protein expression studies to evaluate mitochondrial localization, enzyme abundance, and disease-associated alterations in mitochondrial protein synthesis.

NSJ Bioreagents provides LARS2 Antibody products that undergo validation for research applications to support reliable detection of this essential mitochondrial enzyme. Whether investigating mitochondrial translation, oxidative phosphorylation, inherited mitochondrial disease, cellular metabolism, or organelle biology, a high-quality Mitochondrial Leucyl-tRNA Synthetase Antibody enables accurate characterization of LARS2 expression and localization. As interest in mitochondrial dysfunction continues to expand across numerous fields of biomedical research, LARS2 Antibody remains an indispensable tool for studying mitochondrial protein synthesis and cellular energy homeostasis.

Explore our Metabolism Antibodies page to discover additional antibodies against mitochondrial enzymes, metabolic regulators, amino acid metabolism proteins, and other biomarkers that complement LARS2 Antibody research.

Application Notes

Optimal dilution of the LARS2 Antibody / Mitochondrial Leucyl-tRNA Synthetase Antibody should be determined by the researcher.

Immunogen

E. coli-derived recombinant human Leucyl-tRNA synthetase 2 protein (amino acids D275-E798) was used as the immunogen for the LARS2 Antibody.

Storage

After reconstitution, the LARS2 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

LARS2 antibody, Mitochondrial Leucyl-tRNA Synthetase antibody, Leucyl-tRNA Synthetase 2 antibody, Mitochondrial Leucine tRNA Ligase antibody, Leucine tRNA Ligase 2 antibody, LeuRS2 antibody