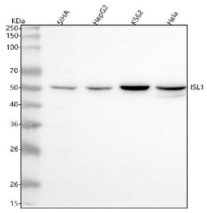
ISL1 Antibody / Islet 1 (FY12670)

Catalog No.	Formulation	Size
FY12670	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
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	P61371
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This ISL1 antibody is available for research use only.



Western blot analysis of Islet 1/ISL1 using anti-ISL1 antibody. Lane 1: human SIHA whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human K562 whole cell lysates, Lane 4: human Hela 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-ISL1 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. A predominant band is observed at ~50 kDa, with a lower band near 40-45 kDa. The pattern is consistent with reported ISL1 isoforms and phosphorylation dependent mobility shifts relative to the calculated ~39 kDa.

Description

ISL1 antibody recognizes Islet 1, a LIM homeodomain transcription factor that plays a pivotal role in the development of motor neurons, pancreatic islet cells, and cardiac progenitor cells. As a member of the LIM-homeodomain (LIM-HD) family of transcriptional regulators, Islet 1 binds DNA through its homeobox domain while engaging in protein-protein

interactions via its LIM domains. These dual functions allow it to coordinate the expression of genes critical for cell fate specification and tissue morphogenesis. During embryogenesis, Islet 1 expression is first detected in the motor neuron precursors of the neural tube and in cardiac progenitor cells within the secondary heart field. It later appears in endocrine progenitor cells of the pancreas, where it drives differentiation of insulin-producing beta cells and other hormone-secreting cell types. Studies have shown that ISL1 serves as an essential transcriptional activator of insulin, glucagon, and somatostatin promoters, making it indispensable for pancreatic endocrine lineage formation.

In the nervous system, Islet 1 contributes to the establishment of motor neuron identity by partnering with LIM-only proteins (LMO1/LMO2) and transcriptional cofactors such as LDB1. Through this complex, ISL1 coordinates downstream target genes including HB9, thereby ensuring correct axonal pathfinding and connectivity. Cardiac research has also highlighted the protein's importance in heart morphogenesis: loss of ISL1 expression leads to severe defects in outflow tract and right ventricular formation. In adult tissues, Islet 1 expression remains restricted, making it a reliable marker for progenitor populations within the heart and pancreas. Its involvement in regenerative processes has spurred studies into ISL1-positive stem cells for cardiac repair therapies.

Defects in the ISL1 gene have been associated with congenital heart anomalies such as hypoplastic left heart syndrome. Moreover, altered expression patterns have been implicated in certain cancers, including pancreatic neuroendocrine tumors, suggesting that ISL1 might function as a diagnostic biomarker in pathology. The ISL1 antibody is thus widely employed in developmental biology, regenerative medicine, and cancer research. Applications include western blotting, immunohistochemistry, and immunofluorescence to visualize Islet 1 expression patterns across developmental stages and tissues. Researchers also use it to identify cardiac progenitors derived from embryonic stem cells or induced pluripotent stem cells. With high specificity validated through gene knockout and siRNA studies, this antibody enables clear detection of both native and overexpressed forms of the protein.

Because ISL1 acts upstream of crucial signaling cascades such as BMP, Wnt, and Notch, it continues to serve as a key molecular handle for dissecting differentiation pathways. Whether used in stem cell research, neurodevelopmental analysis, or pancreatic cell lineage tracing, the ISL1 antibody provides reliable and reproducible detection of this transcription factor. NSJ Bioreagents provides a validated ISL1 antibody optimized for its applications, supporting developmental, cardiac, and endocrine research.

Application Notes

Optimal dilution of the ISL1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human ISL1 recombinant protein (Position: D118-Q289) was used as the immunogen for the ISL1 antibody.

Storage

After reconstitution, the ISL1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.