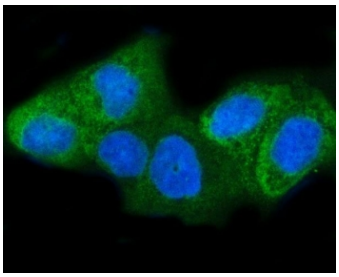
INSIG1 Antibody / Insulin-induced gene 1 Antibody (RQ8469)

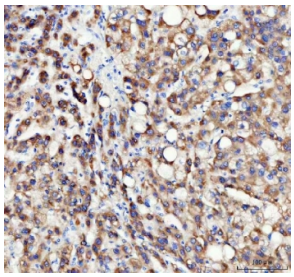
Catalog No.	Formulation	Size
RQ8469	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

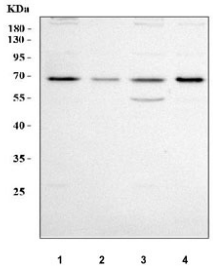
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	O15503
Localization	Cytoplasm
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This INSIG1 Antibody / Insulin-induced gene 1 Antibody is available for research use only.



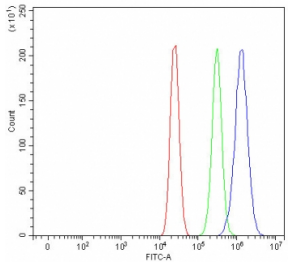
INSIG1 Antibody IF in Human HeLa Cells. Immunofluorescent staining of FFPE human HeLa cells using the Insulin-induced gene 1 Antibody (green), with DAPI nuclear counterstaining (blue). INSIG1 immunoreactivity is observed predominantly in the cytoplasm, with a granular distribution consistent with its association with intracellular membranes. Heat-induced epitope retrieval was performed by steaming in citrate buffer (pH 6.0) for 20 minutes.



INSIG1 Antibody IHC in Human Liver Cancer. Immunohistochemical staining of FFPE human liver cancer tissue using the Insulin-induced gene 1 Antibody. Brown DAB staining is observed predominantly in the cytoplasm of tumor cells, with variable staining intensity and comparatively limited nuclear staining. Heat-induced epitope retrieval was performed by boiling tissue sections in EDTA buffer (pH 8.0) for 20 minutes, followed by cooling before staining.



INSIG1 Antibody WB in Human HepG2, A549, MCF7, and HUH7 Cells. Western blot analysis of human HepG2 (lane 1), A549 (lane 2), MCF7 (lane 3), and HUH7 (lane 4) cell lysates using the Insulin-induced gene 1 Antibody. A prominent band is detected at approximately 66-70 kDa across all four samples, above the predicted molecular weight of approximately 30 kDa for INSIG1. The identity of the higher-molecular-weight species has not been independently established.



INSIG1 Antibody FACS in Human MCF7 Cells. Flow cytometry analysis of fixed and permeabilized human MCF7 cells using the Insulin-induced gene 1 Antibody at 1 ug per million cells following blocking with goat serum. The antibody-stained population (blue) exhibits a rightward fluorescence shift relative to the isotype control (green) and unstained cells (red), indicating detection of intracellular INSIG1-associated immunoreactivity.

Description

INSIG1 Antibody / Insulin-induced gene 1 Antibody targets insulin-induced gene 1 (INSIG1), an integral membrane protein of the endoplasmic reticulum that plays a central role in maintaining cellular lipid homeostasis. INSIG1 belongs to a small family of regulatory proteins that also includes INSIG2. Both proteins participate in the control of cholesterol synthesis and uptake by regulating sterol regulatory element-binding proteins (SREBPs), transcription factors that coordinate the expression of genes involved in cholesterol and fatty acid metabolism. INSIG1 functions as a sterol-responsive component of this regulatory system, helping cells adjust lipid production according to their metabolic requirements.

A major function of INSIG1 involves its interaction with SREBP cleavage-activating protein (SCAP), an endoplasmic reticulum membrane protein that escorts SREBPs to the Golgi apparatus for proteolytic activation. When cellular cholesterol levels are sufficient, sterol-dependent interactions promote the association of SCAP with INSIG proteins, retaining the SCAP-SREBP complex in the endoplasmic reticulum. This prevents SREBP processing and reduces transcription of genes involved in cholesterol biosynthesis and uptake. When cholesterol becomes depleted, SCAP dissociates from INSIG proteins, allowing transport of the complex to the Golgi and subsequent activation of SREBP-dependent transcription.

INSIG1 also regulates cholesterol metabolism through its interactions with 3-hydroxy-3-methylglutaryl-CoA reductase (HMGCR), the rate-limiting enzyme of the mevalonate pathway. Under sterol-replete conditions, INSIG proteins facilitate the recruitment of machinery involved in the ubiquitination and endoplasmic reticulum-associated degradation of HMGCR. This mechanism complements SREBP regulation by controlling both the synthesis and degradation of proteins involved in cholesterol production.

Expression of INSIG1 is itself regulated by SREBP signaling, creating a feedback mechanism that helps restore lipid balance after periods of sterol depletion. Its abundance is also influenced by metabolic conditions and protein turnover, allowing the regulatory system to respond dynamically to changes in cellular cholesterol availability. Disruption of INSIG-

dependent signaling can alter lipid synthesis, cholesterol distribution, and metabolic adaptation. These processes are relevant to investigations of metabolic disease, cellular stress, and the metabolic changes associated with cancer. The INSIG1 Antibody provides a reagent for examining this important regulator of sterol sensing and lipid homeostasis.

Explore our Metabolism Antibodies collection for additional research antibodies targeting proteins involved in cholesterol regulation, lipid biosynthesis, and cellular metabolic signaling.

Application Notes

Optimal dilution of the INSIG1 Antibody / Insulin-induced gene 1 Antibody should be determined by the researcher.

Immunogen

An E.coli-derived human recombinant protein (amino acids M1-R87) was used as the immunogen for the Insulin-induced gene 1 / INSIG1 antibody.

Storage

After reconstitution, the Insulin-induced gene 1 / INSIG1 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

Insig-1 antibody, Insulin-induced protein 1 antibody, Insulin-induced gene protein 1 antibody, Insulin-induced gene 1 protein antibody, Insig1 protein antibody, INSIG-1 antibody, Insulin-induced membrane protein 1 antibody

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