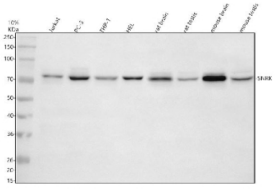
SNRK Antibody / SNF-related serine/threonine-protein kinase (FY13319)

Catalog No.	Formulation	Size
FY13319	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
Host	Rabbit
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	Q9NRH2
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This SNRK antibody is available for research use only.



Western blot analysis of SNRK using anti-SNRK antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Jurkat whole cell lysates, Lane 2: human PC-3 whole cell lysates, Lane 3: human THP-1 whole cell lysates, Lane 4: human HEL whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat testis tissue lysates, Lane 7: mouse brain tissue lysates, Lane 8: mouse testis 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-SNRK 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 predominant band is detected between an approximately 75 and 80 kDa in all samples, slightly below the predicted ~84 kDa size but consistent with the apparent molecular weight of the major SNRK isoform under these electrophoresis conditions.

Description

SNRK antibody detects SNF-related serine/threonine-protein kinase, a cytoplasmic and nuclear kinase encoded by the SNRK gene on chromosome 3q25.1. SNRK belongs to the AMP-activated protein kinase (AMPK)-related kinase family and functions as an energy sensor that regulates metabolism, inflammation, and cellular stress responses. The SNRK protein localizes to both cytoplasm and nucleus, where it phosphorylates substrates involved in energy metabolism, autophagy, and cardiac development. Like other AMPK family kinases, SNRK responds to changes in cellular ATP levels, linking nutrient availability to metabolic adaptation.

SNRK antibody identifies a kinase containing an N-terminal catalytic domain with the conserved activation loop threonine residue, followed by a unique C-terminal regulatory region that mediates protein-protein interactions. Activation of SNRK occurs via phosphorylation by upstream kinases such as LKB1. Once activated, SNRK phosphorylates downstream targets that regulate glucose uptake, fatty acid oxidation, and mitochondrial function. It plays a key role in maintaining cellular energy homeostasis under metabolic stress.

In cardiac tissue, SNRK supports myocardial energy efficiency and contractile function by modulating lipid metabolism and mitochondrial biogenesis. Loss of SNRK impairs mitochondrial respiration and increases susceptibility to metabolic disorders. In neurons, SNRK contributes to synaptic vesicle trafficking and axonal growth through phosphorylation of cytoskeletal and vesicle-associated proteins. Additionally, SNRK modulates inflammatory pathways by phosphorylating NF-kappaB regulators and promoting macrophage polarization toward an anti-inflammatory phenotype.

Pathway involvement of SNRK includes the AMPK signaling network, where it acts downstream of metabolic stress sensors to control autophagy, oxidative metabolism, and lipid catabolism. The kinase also participates in developmental signaling related to angiogenesis and cardiogenesis. Studies have shown that SNRK expression increases during fasting or hypoxia, supporting its role in adaptive metabolic regulation. Structurally, SNRK shares homology with other AMPK family kinases such as MARK2 and NUAK1, containing conserved ATP-binding and activation loop motifs.

Clinically, alterations in SNRK expression have been associated with obesity, insulin resistance, and heart disease. In the nervous system, SNRK dysregulation may contribute to neuroinflammation and neurodegeneration. Genome-wide association studies have linked SNRK variants to lipid metabolism disorders and coronary artery disease risk. The kinase's regulatory control of energy metabolism and inflammatory responses makes it a promising therapeutic target for metabolic and cardiovascular disease research.

Immunohistochemical staining using SNRK antibody shows cytoplasmic and nuclear localization in cardiac myocytes, neurons, and hepatocytes. The SNRK antibody from NSJ Bioreagents is a powerful tool for studying AMPK-related kinase signaling, mitochondrial regulation, and metabolic adaptation pathways.

Application Notes

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

Immunogen

E.coli-derived human SNRK recombinant protein (Position: D48-E750) was used as the immunogen for the SNRK antibody.

Storage

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