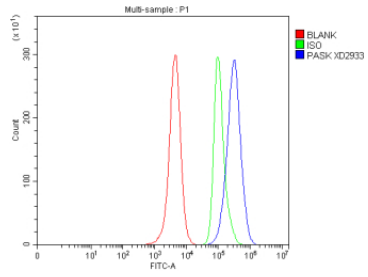
PASK Antibody / PAS kinase (FY12698)

Catalog No.	Formulation	Size
FY12698	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
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	Q96RG2
Applications	Flow Cytometry : 1-3ug/million cells
Limitations	This PASK antibody is available for research use only.



Flow Cytometry analysis of HeLa cells using anti-PASK antibody. Overlay histogram showing HeLa cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-PASK 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 without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

PASK antibody detects PAS domain-containing serine/threonine-protein kinase, an evolutionarily conserved enzyme that functions as a nutrient and energy sensor linking cellular metabolism with transcriptional control. Encoded by the PASK gene on chromosome 2q37.3, this kinase contains a C-terminal catalytic domain and N-terminal PAS (Per-Arnt-Sim) domains that sense changes in oxygen, redox potential, and small-molecule metabolites. PASK acts as a molecular integrator that coordinates energy homeostasis, glucose metabolism, and mitochondrial biogenesis in response to

nutrient availability. The PAS domains enable regulation of its kinase activity through allosteric mechanisms, allowing PASK to respond dynamically to metabolic states.

PASK is broadly expressed in liver, skeletal muscle, pancreatic islets, and the brain, tissues that exhibit strong metabolic plasticity. In hepatocytes, PASK influences glycogen synthesis and gluconeogenic pathways, while in pancreatic beta cells it modulates insulin secretion. Mice lacking PASK exhibit altered glucose tolerance, reduced hepatic glycogen storage, and impaired mitochondrial function, demonstrating its role in metabolic adaptation. PASK phosphorylates transcriptional coactivators such as PGC-1alpha and CREB-regulated transcriptional coactivator 2 (CRTC2), linking nutrient signaling with gene expression that governs oxidative metabolism.

The PASK antibody is used in metabolic research to detect PASK expression and activation across tissues. Western blotting typically identifies a ~160 kilodalton band corresponding to the full-length kinase, while immunofluorescence localizes it to the cytoplasm and nucleus depending on cell type. In mammalian systems, PASK activity rises during fasting and decreases in nutrient-replete conditions, reflecting its regulatory role in energy balance. Because dysregulation of PASK signaling has been associated with diabetes, obesity, and mitochondrial dysfunction, this antibody provides an important tool for investigating metabolic signaling networks.

Recent studies also implicate PASK in circadian rhythm regulation and differentiation of muscle and stem cells. Its PAS domains act as environmental sensors, adjusting transcriptional programs to oxygen and redox changes. PASK interacts with AMPK and mTOR pathways, highlighting its integration into major metabolic signaling circuits. The PASK antibody enables researchers to explore these regulatory interactions and to characterize PASK as a potential therapeutic target in metabolic disease and aging. NSJ Bioreagents provides this antibody validated for its applications, ensuring precise detection across human and model systems.

Application Notes

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

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human PASK was used as the immunogen for the PASK antibody.

Storage

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