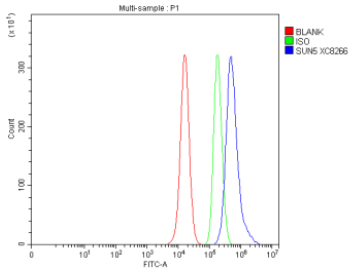
SUN5 Antibody / Sad1 and UNC84 domain-containing protein 5 (FY13107)

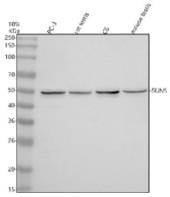
Catalog No.	Formulation	Size
FY13107	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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	Q8TC36
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SUN5 antibody is available for research use only.



Flow Cytometry analysis of human PC-3 cells using anti-SUN5 antibody. Overlay histogram showing PC-3 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-SUN5 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.



Western blot analysis of SUN5 using anti-SUN5 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human PC-3 whole cell lysates, Lane 2: rat testis tissue lysates, Lane 3: rat C6 whole cell lysates, Lane 4: 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-SUN5 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. SUN5 antibody detects a single band at ~50 kDa in tested lysates. Although the calculated mass is ~43 kDa, SUN5 is a membrane SUN-domain protein whose glycosylation and membrane topology commonly yield slower electrophoretic migration.

Description

SUN5 antibody detects Sad1 and UNC84 domain-containing protein 5, a nuclear envelope protein that anchors the nucleus to the cytoskeleton during spermatogenesis. The UniProt recommended name is Sad1 and UNC84 domain-containing protein 5 (SUN5). This transmembrane protein is part of the linker of nucleoskeleton and cytoskeleton (LINC) complex, which connects nuclear components to cytoskeletal filaments, ensuring nuclear positioning and structural integrity.

Functionally, SUN5 antibody identifies a 379-amino-acid protein localized to the inner nuclear membrane, where it interacts with outer membrane proteins such as Nesprins through its conserved SUN domain. SUN5 is particularly enriched in spermatids, where it mediates head-to-tail coupling during sperm maturation. Loss of SUN5 disrupts this linkage, leading to acephalic spermatozoa and infertility.

The SUN5 gene is located on chromosome 20q11.22 and is predominantly expressed in testis, with lower expression in other tissues. Its testis-specific expression pattern underscores its specialized function in spermiogenesis. SUN5 contributes to nuclear shaping, centrosome attachment, and flagellar organization through mechanical coupling between the nucleus and cytoskeleton.

Pathologically, mutations in SUN5 are associated with acephalic spermatozoa syndrome and male infertility due to defective sperm head-tail junction formation. Research using SUN5 antibody supports studies in reproductive biology, nuclear envelope architecture, and cytoskeletal interaction mechanisms.

SUN5 antibody is validated for use in western blotting, immunofluorescence, and immunohistochemistry to study LINC complex components and spermatid structure. NSJ Bioreagents offers SUN5 antibody reagents optimized for cell biology and reproductive system research.

Structurally, SUN5 contains a coiled-coil region and a conserved C-terminal SUN domain that mediates interaction with KASH domain proteins across the nuclear envelope. This antibody helps elucidate SUN5's molecular function in nuclear-cytoskeletal attachment and fertility-related disorders.

Application Notes

Optimal dilution of the SUN5 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SUN5 recombinant protein (Position: E16-K341) was used as the immunogen for the SUN5 antibody.

Storage

After reconstitution, the SUN5 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.