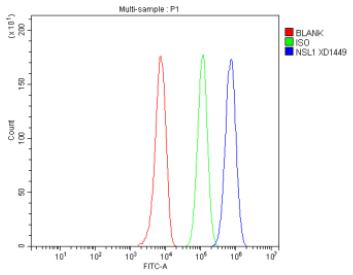
NSL1 Antibody / Kinetochore-associated protein NSL1 (FY13016)

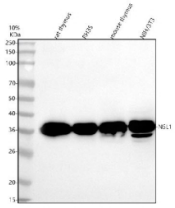
Catalog No.	Formulation	Size
FY13016	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q96IY1
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This NSL1 antibody is available for research use only.



Flow Cytometry analysis of HepG2 cells using anti-NSL1 antibody. Overlay histogram showing HepG2 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-NSL1 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 NSL1 using anti-NSL1 antibody. Lane 1: rat thymus tissue lysates, Lane 2: rat RH-35 whole cell lysates, Lane 3: mouse thymus tissue lysates, Lane 4: mouse NIH/3T3 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-NSL1 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 dominant band is detected at ~36 kDa, matching the apparent migration reported for NSL1 on SDS-PAGE (predicted ~32 kDa from its 281-aa sequence). A weaker lower band in mouse (and possibly rat) near the low-30-kDa region may represent limited proteolysis or a minor transcript variant.

Description

NSL1 antibody detects Kinetochore-associated protein NSL1, a core component of the MIS12 complex required for proper chromosome segregation during mitosis. The UniProt recommended name is Kinetochore-associated protein NSL1 (NSL1). This evolutionarily conserved protein plays a crucial role in the assembly and maintenance of kinetochore structure, ensuring accurate attachment of spindle microtubules to centromeric chromatin during cell division.

Functionally, NSL1 antibody identifies a 281-amino-acid nuclear and centromere-localized protein that forms part of the MIS12 complex, along with MIS12, DSN1, and PMF1. This complex acts as a central linker connecting the inner kinetochore, bound to centromeric DNA, with the outer kinetochore microtubule-binding components. NSL1 stabilizes kinetochore architecture and promotes tension-dependent microtubule attachment, which is essential for accurate chromosome alignment and segregation.

The NSL1 gene is located on chromosome 1q32.3 and encodes a coiled-coil domain-containing protein that contributes to kinetochore-spindle interactions. Through its association with the MIS12 complex, NSL1 participates in recruiting key outer kinetochore proteins such as NDC80 and KNL1, forming the KMN network that mediates microtubule attachment and spindle checkpoint signaling. Disruption of NSL1 function causes chromosome mis-segregation, aneuploidy, and mitotic arrest.

Beyond its structural role, NSL1 coordinates with spindle assembly checkpoint proteins to monitor proper kinetochore-microtubule tension. By serving as a molecular bridge between centromeric chromatin and spindle fibers, NSL1 ensures mitotic fidelity and genomic stability. Dysregulation or mutation of kinetochore components, including NSL1, contributes to chromosomal instability observed in cancer cells, highlighting its importance in tumor biology.

NSL1 antibody is widely used in cell cycle, mitosis, and chromosome segregation research. It is suitable for immunofluorescence, immunoblotting, and immunoprecipitation to study kinetochore organization and spindle checkpoint regulation. In cancer biology, this antibody supports investigations into chromosomal instability mechanisms, mitotic defects, and checkpoint adaptation. It also aids in mapping kinetochore composition across cell cycle phases.

Structurally, NSL1 contains coiled-coil motifs and conserved interaction domains that facilitate complex assembly with MIS12 and DSN1. Its function depends on dynamic phosphorylation and protein-protein interactions during metaphase and anaphase transitions. NSJ Bioreagents provides NSL1 antibody reagents validated for use in mitotic regulation, kinetochore biology, and genomic stability research.

Application Notes

Optimal dilution of the NSL1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NSL1 recombinant protein (Position: M1-K231) was used as the immunogen for the NSL1 antibody.

Storage

After reconstitution, the NSL1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Copyright © NSJ Bioreagents. All rights reserved.