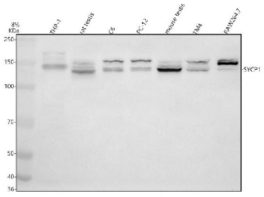
SYCP1 Antibody / Synaptonemal complex protein 1 (FY12055)

Catalog No.	Formulation	Size
FY12055	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	Q15431
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This SYCP1 antibody is available for research use only.



Western blot analysis of SYCP1 using anti-SYCP1 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human THP-1 whole cell lysates, Lane 2: rat testis tissue lysates, Lane 3: rat C6 whole cell lysates, Lane 4: rat PC-12 whole cell lysates, Lane 5: mouse testis tissue lysates, Lane 6: mouse TM4 whole cell lysates, Lane 7: mouse RAW264.7 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-SYCP1 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. Expected size for full-length SYCP1 ~114â€‰kDa. In our tumor-cellâ€•line lysates we detect a band at ~120-130â€‰kDa and an additional band at ~150â€‰kDa. The ~120-130â€‰kDa band aligns with literature; the ~150â€‰kDa band may represent a modified, aggregated or altered form of SYCP1 and has not been widely documented in published Western blots for SYCP1.

Description

SYCP1 antibody detects Synaptonemal complex protein 1, encoded by the SYCP1 gene. Synaptonemal complex protein 1 is a structural protein that forms the transverse filaments of the synaptonemal complex during meiosis. SYCP1 antibody provides researchers with a specific reagent for studying meiotic chromosome pairing, synapsis, and fertility.

Synaptonemal complex protein 1 plays a fundamental role in meiotic prophase I. Research using SYCP1 antibody has shown that it bridges homologous chromosomes by connecting lateral elements composed of SYCP2 and SYCP3. This zipper-like structure stabilizes pairing and promotes homologous recombination, ensuring proper segregation of chromosomes. Without SYCP1, homologous pairing fails, leading to meiotic arrest and infertility.

Studies with SYCP1 antibody have revealed that disruption of synaptonemal complex protein 1 causes sterility in both male and female model organisms. In humans, variants in SYCP1 have been linked to cases of infertility, demonstrating its conserved role in reproductive biology. Its structural role makes SYCP1 a key marker for meiotic progression.

Beyond meiosis, SYCP1 has been used as a biomarker for germ cell development. Research using SYCP1 antibody has shown that its expression is restricted to meiotic cells, allowing it to be used as a reliable marker for spermatogenesis and oogenesis studies. This makes SYCP1 antibody a valuable tool for developmental and reproductive biology research.

SYCP1 antibody is widely applied in immunohistochemistry, immunofluorescence, and western blotting. Immunohistochemistry highlights expression in testis and ovary, immunofluorescence demonstrates localization along meiotic chromosomes, and western blotting quantifies expression during gametogenesis. These applications make SYCP1 antibody indispensable for meiosis research.

By providing validated SYCP1 antibody reagents, NSJ Bioreagents supports studies into meiotic recombination, synaptonemal complex assembly, and infertility. Detection of Synaptonemal complex protein 1 provides researchers with insight into how meiotic structures safeguard chromosome segregation.

Application Notes

Optimal dilution of the SYCP1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SYCP1 recombinant protein (Position: D95-H717) was used as the immunogen for the SYCP1 antibody.

Storage

After reconstitution, the SYCP1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.