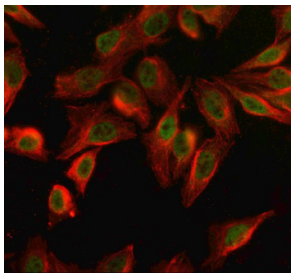
# SPO11 Antibody / Meiotic recombination protein SPO11 (FY12052)

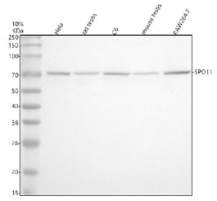
| Catalog No. | Formulation | Size |
|---|---|---|
| FY12052 | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

**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** | Q9Y5K1 |
| **Applications** | Western Blot : 0.25-0.5ug/ml<br>Immunocytochemistry/Immunofluorescence : 5ug/ml<br>ELISA : 0.1-0.5ug/ml |
| **Limitations** | This SPO11 antibody is available for research use only. |



Immunofluorescent staining of SPO11 using anti-SPO11 antibody (green) and anti-Beta Tubulin antibody (red). SPO11 was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-SPO11 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of SPO11 using anti-SPO11 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: rat testis tissue lysates, Lane 3: rat C6 whole cell lysates, Lane 4: mouse testis tissue lysates, Lane 5: 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-SPO11 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. The expected band size for SPO11 is at 45 kDa but the protein can be observed at 55-70 kDa.

## Description

SPO11 antibody detects Meiotic recombination protein SPO11, encoded by the SPO11 gene. Meiotic recombination protein SPO11 is a topoisomerase-like enzyme that catalyzes the formation of programmed double-strand breaks during meiosis. SPO11 antibody provides researchers with a specific reagent for studying meiotic recombination, chromosome segregation, and fertility.

Meiotic recombination protein SPO11 is structurally related to archaeal topoisomerase VI subunits and uses a conserved tyrosine residue to generate covalent intermediates with DNA. Research using SPO11 antibody has shown that these breaks initiate homologous recombination, ensuring accurate pairing and exchange between homologous chromosomes. This process increases genetic diversity and is critical for gamete production.

Studies with SPO11 antibody have demonstrated that SPO11 activity is tightly regulated by accessory proteins, including REC114, MEI4, and others, which control timing and location of double-strand break formation. Without SPO11, homologous recombination fails, leading to meiotic arrest and infertility. These findings highlight its essential role in reproductive biology.

Dysfunction of Meiotic recombination protein SPO11 has been linked to infertility and meiotic disorders. Research using SPO11 antibody has shown that mutations impair break formation, resulting in abnormal gametogenesis. In model organisms, deletion of SPO11 causes sterility, while hypomorphic alleles produce meiotic defects. These observations emphasize its indispensable role in meiotic recombination.

SPO11 antibody is commonly used in western blotting, immunohistochemistry, and chromatin immunoprecipitation. Western blotting quantifies SPO11 expression in testis and ovary, immunohistochemistry reveals localization in meiotic cells, and chromatin immunoprecipitation identifies DNA binding and recombination sites. These applications make SPO11 antibody indispensable for reproductive biology research.

By providing validated SPO11 antibody reagents, NSJ Bioreagents supports studies into meiosis, recombination, and fertility. Detection of Meiotic recombination protein SPO11 provides researchers with insights into how double-strand breaks initiate homologous recombination and ensure chromosome segregation.

## Application Notes

Optimal dilution of the SPO11 antibody should be determined by the researcher.

## Immunogen

E.coli-derived human SPO11 recombinant protein (Position: R40-D326) was used as the immunogen for the SPO11 antibody.

## Storage

After reconstitution, the SPO11 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.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