

Spo11 (C-4): sc-377161

BACKGROUND

Spo11 is a type II topoisomerase that is thought to generate the chromosome breaks that initiate meiotic recombination. The Spo11 protein initiates meiotic recombination by generating DNA double-strand breaks (DSBs) and is required for meiotic synapsis in *S. cerevisiae*. The DSBs are located mostly in promoter regions, where the chromatin is in an open configuration, and cluster in domains along the chromosome. Expression of the Spo11 is detected mainly in the testis, in agreement with its predicted function in the initiation of meiotic recombination. Disruption of Spo11 leads to severe gonadal abnormalities from defective meiosis and results in infertility.

REFERENCES

- Mezard, C., et al. 1999. Mechanisms and control of meiotic recombination in the yeast *Saccharomyces cerevisiae*. *J. Soc. Biol.* 193: 23-27.
- Metzler-Guillemain, C., et al. 2000. Identification and characterization of an Spo11 homolog in the mouse. *Chromosoma* 109: 133-138.
- Celerin, M., et al. 2000. Multiple roles of Spo11 in meiotic chromosome behavior. *EMBO J.* 19: 2739-2750.
- Romanienko, P.J., et al. 2000. The mouse Spo11 gene is required for meiotic chromosome synapsis. *Mol. Cell* 6: 975-987.
- Baudat, F., et al. 2000. Chromosome synapsis defects and sexually dimorphic meiotic progression in mice lacking Spo11. *Mol. Cell* 6: 989-998.
- Prieler, S., et al. 2005. The control of Spo11's interaction with meiotic recombination hotspots. *Genes Dev.* 19: 255-269.

CHROMOSOMAL LOCATION

Genetic locus: SPO11 (human) mapping to 20q13.31; Spo11 (mouse) mapping to 2 H3.

SOURCE

Spo11 (C-4) is a mouse monoclonal antibody raised against amino acids 97-396 mapping at the C-terminus of Spo11 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Spo11 (C-4) is available conjugated to agarose (sc-377161 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377161 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377161 PE), fluorescein (sc-377161 FITC), Alexa Fluor[®] 488 (sc-377161 AF488), Alexa Fluor[®] 546 (sc-377161 AF546), Alexa Fluor[®] 594 (sc-377161 AF594) or Alexa Fluor[®] 647 (sc-377161 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377161 AF680) or Alexa Fluor[®] 790 (sc-377161 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

Spo11 (C-4) is recommended for detection of Spo11 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

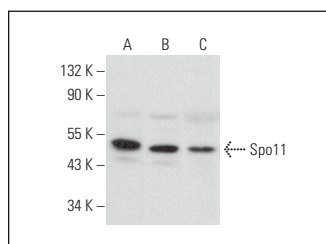
Suitable for use as control antibody for Spo11 siRNA (h): sc-38436, Spo11 siRNA (m): sc-38437, Spo11 shRNA Plasmid (h): sc-38436-SH, Spo11 shRNA Plasmid (m): sc-38437-SH, Spo11 shRNA (h) Lentiviral Particles: sc-38436-V and Spo11 shRNA (m) Lentiviral Particles: sc-38437-V.

Positive Controls: Hep G2 nuclear extract: sc-364819, HeLa nuclear extract: sc-2120 or PC-3 nuclear extract: sc-2152.

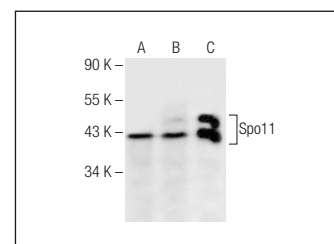
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



Spo11 (C-4): sc-377161. Western blot analysis of Spo11 expression in K-562 (A) and SP2/0 (B) whole cell lysates and rat testis tissue extract (C).



Spo11 (C-4): sc-377161. Western blot analysis of Spo11 expression in Hep G2 (A), HeLa (B) and PC-3 (C) nuclear extracts.

SELECT PRODUCT CITATIONS

- Ge, P., et al. 2021. Long-term exposure to formaldehyde induced down-regulation of Spo11 in rats. *Inhal. Toxicol.* 33: 8-17.
- Mehdi, S., et al. 2020. LY75 suppression in mesenchymal epithelial ovarian cancer cells generates a stable hybrid EOC cellular phenotype, associated with enhanced tumor initiation, spreading and resistance to treatment in orthotopic xenograft mouse model. *Int. J. Mol. Sci.* 21: 4992.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.