

SA-2 (S-18): sc-54512

BACKGROUND

The cohesion complex is a multi-protein structure that is required for cohesion of sister chromatids after DNA replication and may be involved in mitotic spindle pole assembly. There are several versions of the cohesion complex, all of which are composed of a heterodimer between SMC1 (SMC1A or SMC1B) and SMC3, as well as a linker protein called Rad21 and an additional binding protein. Depending on the complex, the additional protein can be SA-1 (stromal antigen 1), SA-2 (stromal antigen 2) or SA-3 (stromal antigen 3). SA-2, also known as STAG2, is a 1,231 amino acid component of the cohesion complex that interacts directly with Rad21. Localized to the nucleus, SA-2 associates with chromatin and, upon phosphorylation by Plk, dissociates from chromatin to allow proper chromosome separation during anaphase. SA-2 is able to enhance the activity of tumor necrosis factor α (TNF α) and may be a putative transcriptional regulator.

REFERENCES

- Sumara, I., et al. 2000. Characterization of vertebrate cohesin complexes and their regulation in prophase. *J. Cell Biol.* 151: 749-762.
- Prieto, I., et al. 2002. STAG2 and Rad21 mammalian mitotic cohesins are implicated in meiosis. *EMBO Rep.* 3: 543-550.
- Lara-Pezzi, E., et al. 2004. Evi-dence of a transcriptional co-activator function of cohesin STAG/SA/Scs3. *J. Biol. Chem.* 279: 6553-6559.
- Hauf, S., et al. 2005. Dissociation of cohesin from chromosome arms and loss of arm cohesion during early mitosis depends on phosphorylation of SA-2. *PLoS Biol.* 3: e69.
- McGuinness, B.E., et al. 2005. Shugoshin prevents dissociation of cohesin from centromeres during mitosis in vertebrate cells. *PLoS Biol.* 3: e86.
- Krasikova, A., et al. 2005. Cohesion proteins are present in centromere protein bodies associated with avian lampbrush chromosomes. *Chromosome Res.* 13: 675-685.

CHROMOSOMAL LOCATION

Genetic locus: STAG2 (human) mapping to Xq25; Stag2 (mouse) mapping to X A4.

SOURCE

SA-2 (S-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of SA-2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54512 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

SA-2 (S-18) is recommended for detection of cohesin subunit SA-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

SA-2 (S-18) is also recommended for detection of cohesin subunit SA-2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SA-2 siRNA (h): sc-62970, SA-2 siRNA (m): sc-62971, SA-2 shRNA Plasmid (h): sc-62970-SH, SA-2 shRNA Plasmid (m): sc-62971-SH, SA-2 shRNA (h) Lentiviral Particles: sc-62970-V and SA-2 shRNA (m) Lentiviral Particles: sc-62971-V.

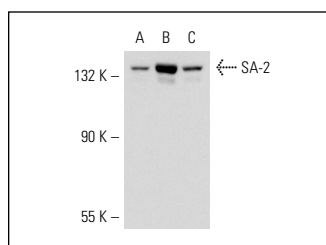
Molecular Weight of SA-2: 141 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

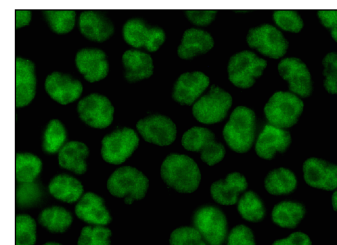
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



SA-2 (S-18): sc-54512. Western blot analysis of SA-2 expression in MCF7 (A), K-562 (B) and Jurkat (C) nuclear extracts.



SA-2 (S-18): sc-54512. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

RESEARCH USE

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

MONOS
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Try **SA-2 (G-12): sc-398229** or **SA-2 (B-11): sc-376026**, our highly recommended monoclonal alternatives to SA-2 (S-18).