

SA-1 (LL-16): sc-81851

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. The complex is composed of a heterodimer between SMC1 and SMC3, two proteins that are linked at their heads by Rad21, and an additional protein called SA-1 (stromal antigen 1). SA-1, also known as STAG1, is a 1,258 amino acid component of the cohesion complex that interacts directly with Rad21. Localized to the nucleus, SA-1 associates with chromatin and, upon phosphorylation by Plk, dissociates from chromatin to allow proper chromosome separation during anaphase. SA-1, the human homolog of yeast Scc3p, is expressed in thymus, bone marrow and spleen and is 99% similar to its mouse counterpart.

REFERENCES

1. Carramolino, L., et al. 1997. SA-1, a nuclear protein encoded by one member of a novel gene family: molecular cloning and detection in hemopoietic organs. *Gene* 195: 151-159.
2. Sumara, I., et al. 2000. Characterization of vertebrate cohesin complexes and their regulation in prophase. *J. Cell Biol.* 151: 749-762.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604358. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Anazawa, Y., et al. 2004. Identification of STAG1 as a key mediator of a p53-dependent apoptotic pathway. *Oncogene* 23: 7621-7627.

CHROMOSOMAL LOCATION

Genetic locus: STAG1 (human) mapping to 3q22.3.

SOURCE

SA-1 (LL-16) is a mouse monoclonal antibody raised against recombinant SA-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SA-1 (LL-16) is recommended for detection of cohesin subunit SA-1 of human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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 SA-1 siRNA (h): sc-62968, SA-1 shRNA Plasmid (h): sc-62968-SH and SA-1 shRNA (h) Lentiviral Particles: sc-62968-V.

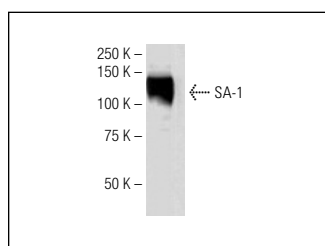
Molecular Weight of SA-1: 155 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

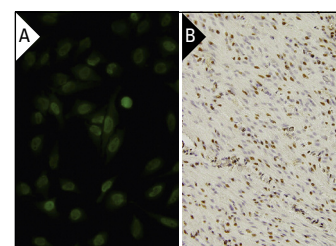
RECOMMENDED SUPPORT REAGENTS

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, 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 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



SA-1 (LL-16): sc-81851. Western blot analysis of SA-1 expression in HeLa whole cell lysate.



SA-1 (LL-16): sc-81851. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells (A) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human smooth muscle tissue (B) showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Solomon, D.A., et al. 2011. Mutational inactivation of STAG2 causes aneuploidy in human cancer. *Science* 333: 1039-1043.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.