

SA-1 (A-9): sc-365061

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: 6043580. 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; Stag1 (mouse) mapping to 9 E4.

SOURCE

SA-1 (A-9) is a mouse monoclonal antibody raised against amino acids 1117-1202 mapping near the C-terminus of SA-1 of human origin.

PRODUCT

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

SA-1 (A-9) is available conjugated to agarose (sc-365061 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365061 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365061 PE), fluorescein (sc-365061 FITC), Alexa Fluor® 488 (sc-365061 AF488), Alexa Fluor® 546 (sc-365061 AF546), Alexa Fluor® 594 (sc-365061 AF594) or Alexa Fluor® 647 (sc-365061 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365061 AF680) or Alexa Fluor® 790 (sc-365061 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

SA-1 (A-9) is recommended for detection of SA-1 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 SA-1 siRNA (h): sc-62968, SA-1 siRNA (m): sc-62969, SA-1 shRNA Plasmid (h): sc-62968-SH, SA-1 shRNA Plasmid (m): sc-62969-SH, SA-1 shRNA (h) Lentiviral Particles: sc-62968-V and SA-1 shRNA (m) Lentiviral Particles: sc-62969-V.

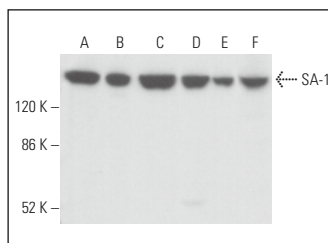
Molecular Weight of SA-1: 155 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, PC-12 cell lysate: sc-2250 or HEL 92.1.7 cell lysate: sc-2270.

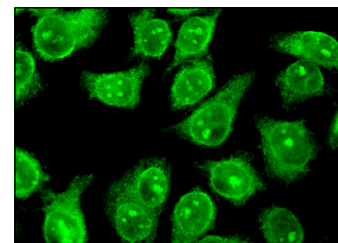
RECOMMENDED SUPPORT REAGENTS

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



SA-1 (A-9): sc-365061. Western blot analysis of SA-1 expression in HEL 92.1.7 (A), TF-1 (B), c4 (C), PC-12 (D) and AT3B-1 (E) whole cell lysates and KNRK nuclear extract (F).



SA-1 (A-9): sc-365061. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Kim, J.S., et al. 2016. Intact cohesion, anaphase, and chromosome segregation in human cells harboring tumor-derived mutations in STAG2. *PLoS Genet.* 12: e1005865.

RESEARCH USE

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