SANTA CRUZ BIOTECHNOLOGY, INC.

SA-1 (F-3): sc-271976

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

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2. Sumara, I., Vorlaufer, E., Gieffers, C., Peters, B.H. and Peters, J.M. 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., Arakawa, H., Nakagawa, H. and Nakamura, Y. 2004. Identification of STAG1 as a key mediator of a p53-dependent apoptotic pathway. Oncogene 23: 7621-7627.
5. Krasikova, A., Barbero, J.L. and Gaginskaya, E. 2005. Cohesion proteins are present in centromere protein bodies associated with avian lampbrush chromosomes. Chromosome Res. 13: 675-685.

CHROMOSOMAL LOCATION

Genetic locus: STAG1 (human) mapping to 3q22.3; Stag1 (mouse) mapping to 9 E4.

SOURCE

SA-1 (F-3) 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.

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 (F-3) 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.

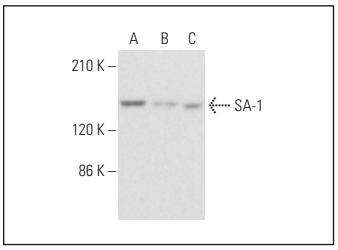
Molecular Weight of SA-1: 155 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HuT 78 whole cell lysate: sc-2208 or SJRH30 cell lysate: sc-2287.

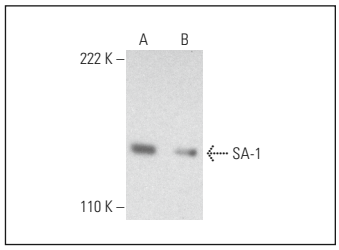
RECOMMENDED SUPPORT REAGENTS

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 (F-3): sc-271976. Western blot analysis of SA-1 expression in U-251-MG (**A**), SJRH30 (**B**) and NIH/3T3 (**C**) whole cell lysates.



SA-1 (F-3): sc-271976. Western blot analysis of SA-1 expression in HuT 78 (**A**) and HEL 92.1.7 (**B**) whole cell lysates.

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.