

SMC1 α (H-6): sc-393171



The Power to Question

BACKGROUND

The SMC (structural maintenance of chromosomes) family of proteins form heterodimeric complexes that modulate sister chromatid cohesion and chromosome condensation for mitosis. SMC1 α (structural maintenance of chromosomes protein 1A), also known as SMC1, SMCB, CDLS2, SB1.8, SMC1L1 or DXS423E, is a 1,233 amino acid nuclear protein that is involved in chromosome cohesion during the cell cycle. SMC1 α interacts with BRCA1 and is phosphorylated by ATM, indicating a potential role in DNA repair. SMC1 α is a component of the cohesion complex, which is required for the cohesion of sister chromatids after DNA replication. Mutations in the gene encoding SMC1 α may be the cause of Cornelia de Lange syndrome (CdLS), which is a clinically heterogeneous developmental disorder characterized by facial dysmorphism, upper limb malformations, growth and cognitive retardation.

CHROMOSOMAL LOCATION

Genetic locus: SMC1A (human) mapping to Xp11.22; Smc1a (mouse) mapping to X F3.

SOURCE

SMC1 α (H-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1202-1233 at the C-terminus of SMC1a of human origin.

PRODUCT

Each vial contains 200 μ g IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-393171 X, 200 μ g/0.1 ml.

Blocking peptide available for competition studies, sc-393171 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SMC1 α (H-6) is recommended for detection of SMC1 α of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

SMC1 α (H-6) is also recommended for detection of SMC1 α in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SMC1 α siRNA (h): sc-38385, SMC1 α siRNA (m): sc-38386, SMC1 α shRNA Plasmid (h): sc-38385-SH, SMC1 α shRNA Plasmid (m): sc-38386-SH, SMC1 α shRNA (h) Lentiviral Particles: sc-38385-V and SMC1 α shRNA (m) Lentiviral Particles: sc-38386-V.

SMC1 α (H-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

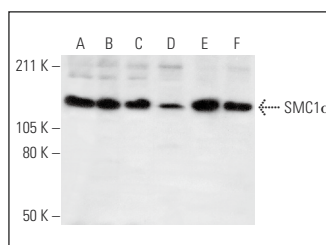
Molecular Weight of SMC1 α : 155 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, Jurkat nuclear extract: sc-2132 or U-937 nuclear extract: sc-2156.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



SMC1 α (H-6): sc-393171. Western blot analysis of SMC1 α expression in K-562 (A), Jurkat (B), U-937 (C), NIH/3T3 (D), MOLT-4 (E) and HL-60 (F) nuclear extracts.

SELECT PRODUCT CITATIONS

- Kim, J.S., et al. 2019. Systematic proteomics of endogenous human cohesin reveals an interaction with diverse splicing factors and RNA binding proteins required for mitotic progression. *J. Biol. Chem.* 294: 8760-8772.
- Liu, X., et al. 2021. Time-dependent effect of 1,6-hexanediol on biomolecular condensates and 3D chromatin organization. *Genome Biol.* 22: 230.
- Aprosoff, C.M., et al. 2023. Comprehensive interactome mapping of the DNA repair scaffold SLX4 using proximity labeling and affinity purification. *J. Proteome Res.* 22: 1660-1681.

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.