SANTA CRUZ BIOTECHNOLOGY, INC.

SmcX (D-14): sc-83173

BACKGROUND

SmcX, also known as JARID1C (Jumonji, AT rich interactive domain 1C), MRXJ, KDM5C or XE169, is a nuclear protein that contains one ARID domain, one JMJC domain, one JMJN domain and two PHD-type zinc fingers and belongs to the JARID1 histone demethylase family. Expressed ubiquitously with highest expression in brain and skeletal muscle, SmcX functions as a histone demethylase that removes methyl groups from lysine residues on Histone H3, thereby playing a role in the histone code, as well as transcriptional regulation and chromatin remodeling. SmcX binds iron and α-ketoglutarate as cofactors and can recruit histone deacetylases to neuron silencer elements, thus repressing the transcription of neuronal genes. Defects in the gene encoding SmcX are associated with X-linked mental retardation (XLMR), a condition characterized by cognitive impairment and a low IQ. Multiple isoforms of SmcX are expressed due to alternative splicing events.

REFERENCES

1. Wu, J., et al. 1994. Isolation and characterization of XE169, a novel human gene that escapes X-inactivation. Hum. Mol. Genet. 3: 153-160.
2. Jensen, L.R., et al. 2005. Mutations in the JARID1C gene, which is involved in transcriptional regulation and chromatin remodeling, cause X-linked mental retardation. Am. J. Hum. Genet. 76: 227-236.
3. Santos, C., et al. 2006. A novel mutation in JARID1C gene associated with mental retardation. Eur. J. Hum. Genet. 14: 583-586.
4. Tzschach, A., et al. 2006. Novel JARID1C/SmcX mutations in patients with X-linked mental retardation. Hum. Mutat. 27: 389.
5. Tahiliani, M., et al. 2007. The Histone H3K4 demethylase SmcX links REST target genes to X-linked mental retardation. Nature 447: 601-605.
6. Iwase, S., et al. 2007. The X-linked mental retardation gene SmcX/JARID1C defines a family of Histone H3 Lysine 4 demethylases. Cell 128: 1077-1088.

CHROMOSOMAL LOCATION

Genetic locus: JARID1C (human) mapping to Xp11.22; Jarid1c (mouse) mapping to X F3.

SOURCE

SmcX (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SmcX of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-83173 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-83173 X, 200 µg/0.1 ml.

RESEARCH USE

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

APPLICATIONS

SmcX (D-14) is recommended for detection of SmcX of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other SMC family members.

SmcX (D-14) is also recommended for detection of SmcX in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SmcX siRNA (h): sc-76519, SmcX siRNA (m): sc-76520, SmcX shRNA Plasmid (h): sc-76519-SH, SmcX shRNA Plasmid (m): sc-76520-SH, SmcX shRNA (h) Lentiviral Particles: sc-76519-V and SmcX shRNA (m) Lentiviral Particles: sc-76520-V.

SmcX (D-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

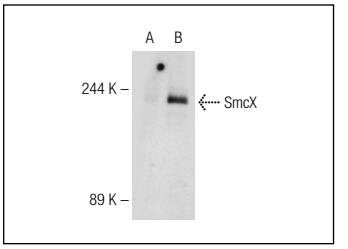
Molecular Weight of SmcX: 176 kDa.

Positive Controls: SmcX (h): 293T Lysate: sc-116240 or SmcX (h3): 293T Lysate: sc-177954.

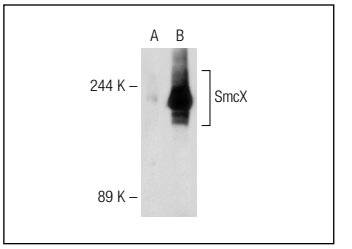
RECOMMENDED SECONDARY REAGENTS

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) 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



SmcX (D-14): sc-83173. Western blot analysis of SmcX expression in non-transfected: sc-117752 (**A**) and human SmcX transfected: sc-177954 (**B**) 293T whole cell lysates.



SmcX (D-14): sc-83173. Western blot analysis of SmcX expression in non-transfected: sc-117752 (**A**) and human SmcX transfected: sc-116240 (**B**) 293T whole cell lysates.

STORAGE

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

PROTOCOLS

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