

SmcX (G-10): sc-376255

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.

CHROMOSOMAL LOCATION

Genetic locus: KDM5C (human) mapping to Xp11.22; Kdm5c (mouse) mapping to X F3.

SOURCE

SmcX (G-10) is a mouse monoclonal antibody raised against amino acids 1303-1383 mapping within an internal region of SmcX of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} 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-376255 X, 200 μ g/0.1 ml.

SmcX (G-10) is available conjugated to agarose (sc-376255 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376255 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376255 PE), fluorescein (sc-376255 FITC), Alexa Fluor[®] 488 (sc-376255 AF488), Alexa Fluor[®] 546 (sc-376255 AF546), Alexa Fluor[®] 594 (sc-376255 AF594) or Alexa Fluor[®] 647 (sc-376255 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376255 AF680) or Alexa Fluor[®] 790 (sc-376255 AF790), 200 μ g/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

SmcX (G-10) is recommended for detection of SmcX 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).

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 (G-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

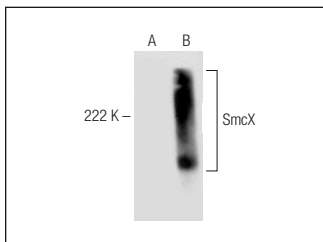
Molecular Weight of SmcX: 176 kDa.

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

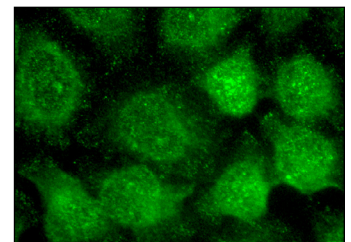
RECOMMENDED SUPPORT REAGENTS

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



SmcX (G-10): sc-376255. Western blot analysis of SmcX expression in non-transfected: sc-117752 (A) and human SmcX transfected: sc-116240 (B) 293T whole cell lysates.



SmcX (G-10): sc-376255. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Pan, Q., et al. 2021. The ZMYND8-regulated mevalonate pathway endows YAP-high intestinal cancer with metabolic vulnerability. *Mol. Cell* 81: 2736-2751.e8.
2. Jia, P., et al. 2021. ZMYND8 mediated liquid condensates spatiotemporally decommission the latent super-enhancers during macrophage polarization. *Nat. Commun.* 12: 6535.

RESEARCH USE

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