SANTA CRUZ BIOTECHNOLOGY, INC.

SmarcAL1 (A-2): sc-376377

BACKGROUND

SmarcAL1 (SWI/SNF-related matrix-associated Actin-dependent regulator of chromatin subfamily A-like protein 1), also known as HARP (HepA-related protein) or HHARP, is a 954 amino acid member of the SWI/SNF family of helicase and ATPase proteins. Localized to the nucleus, SmarcAL1 is a ubiquitously expressed protein that functions in ATP-dependent nucleosome-remodeling activities. SmarcAL1 contains one conserved C-terminal SNF2 domain, one helicase ATP-binding domain and two HARP domains. Defects in the gene encoding SmarcAL1 are the cause of Schimke immuno-osseous dysplasia (SIOD), an autosomal recessive disorder characterized by renal dysfunction, spondyloepiphyseal dysplasia and T cell immunodeficiency.

CHROMOSOMAL LOCATION

Genetic locus: SMARCAL1 (human) mapping to 2q35; Smarcal1 (mouse) mapping to 1 C3.

SOURCE

SmarcAL1 (A-2) is a mouse monoclonal antibody raised against amino acids 831-954 mapping at the C-terminus of SmarcAL1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SmarcAL1 (A-2) is available conjugated to agarose (sc-376377 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376377 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376377 PE), fluorescein (sc-376377 FITC), Alexa Fluor® 488 (sc-376377 AF488), Alexa Fluor® 546 (sc-376377 AF546), Alexa Fluor® 594 (sc-376377 AF594) or Alexa Fluor® 647 (sc-376377 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376377 AF680) or Alexa Fluor® 790 (sc-376377 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SmarcAL1 (A-2) is recommended for detection of SmarcAL1 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), immunohistochemistry (including paraffin-embedded sections) (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 SmarcAL1 siRNA (h): sc-63042, SmarcAL1 siRNA (m): sc-63043, SmarcAL1 shRNA Plasmid (h): sc-63042-SH, SmarcAL1 shRNA Plasmid (m): sc-63043-SH, SmarcAL1 shRNA (h) Lentiviral Particles: sc-63042-V and SmarcAL1 shRNA (m) Lentiviral Particles: sc-63043-V.

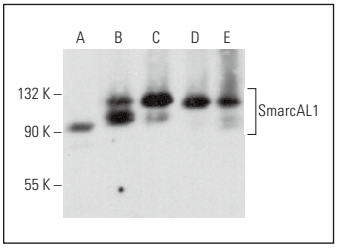
Molecular Weight of SmarcAL1: 110 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, DU 145 cell lysate: sc-2268 or A-431 nuclear extract: sc-2122.

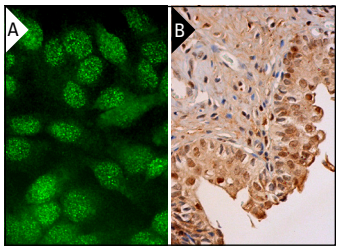
STORAGE

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

DATA



SmarcAL1 (A-2): sc-376377. Western blot analysis of SmarcAL1 expression in DU 145 (**A**), NIH/3T3 (**B**) and 3T3-L1 (**C**) whole cell lysates and A-431 (**D**) and Jurkat (**E**) nuclear extracts.



SmarcAL1 (A-2): sc-376377. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear and cytoplasmic staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Feng, W. and Jasin, M. 2017. BRCA2 suppresses replication stress-induced mitotic and G_1 abnormalities through homologous recombination. Nat. Commun. 8: 525.
2. Diplas, B.H., et al. 2018. The genomic landscape of TERT promoter wild-type-IDH wildtype glioblastoma. Nat. Commun. 9: 2087.
3. Garzón, J., et al. 2019. Human RIF1-protein phosphatase 1 prevents degradation and breakage of nascent DNA on replication stalling. Cell Rep. 27: 2558-2566.e4.
4. Matos, D.A., et al. 2020. ATR protects the genome against R loops through a MUS81-triggered feedback loop. Mol. Cell 77: 514-527.e4.
5. Thakar, T., et al. 2020. Ubiquitinated-PCNA protects replication forks from DNA2-mediated degradation by regulating Okazaki fragment maturation and chromatin assembly. Nat. Commun. 11: 2147.
6. Huang, J.W., et al. 2020. MCM8IP activates the MCM8-9 helicase to promote DNA synthesis and homologous recombination upon DNA damage. Nat. Commun. 11: 2948.
7. Ercilla, A., et al. 2020. Acute hydroxyurea-induced replication blockade results in replisome components disengagement from nascent DNA without causing fork collapse. Cell. Mol. Life Sci. 77: 735-749.
8. Townsend, A., et al. 2021. DCAF14 promotes stalled fork stability to maintain genome integrity. Cell Rep. 34: 108669.
9. Hodson, C., et al. 2022. Branchpoint translocation by fork remodelers as a general mechanism of R-loop removal. Cell Rep. 41: 111749.
10. Leung, W., et al. 2023. ATR protects ongoing and newly assembled DNA replication forks through distinct mechanisms. Cell Rep. 42: 112792.

RESEARCH USE

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