SANTA CRUZ BIOTECHNOLOGY, INC.

ASF1A/B (4A1/3): sc-53171

BACKGROUND

ASF1A (anti-silencing function 1A) is a transcription factor that has been shown to bind with HeLa cell core Histones H3 and H4. Human ASF1A, which shares 71% amino acid identity to ASF1B, is believed to act as a chaperone to derepress genes since that action is observed in yeast ASF1A. High phosphorylation of ASF1A is demonstrated during the S-phase of the cell cycle. Both ASF1A and B are phosophorylated by the proteins TLK1 and TLK2. The ASF1B gene has been mapped to chromosome 19p13.12 while the ASF1A gene localizes to 6q22.31. ASF1A and B cooperate in the formation of nucleosomes along with the protein CAF1.

REFERENCES

1. Schwabish, M.A., et al. 2006. ASF1 mediates histone eviction and deposition during elongation by RNA polymerase II. Mol. Cell 22: 415-422.
2. Sen, S.P., et al. 2006. TLK1B promotes repair of UV-damaged DNA through chromatin remodeling by ASF1. BMC Mol. Biol. 7: 37.
3. Bao, Y., et al. 2006. ASF1, a loveseat for a histone couple. Cell 127: 458-460.
4. English, C.M., et al. 2006. Structural basis for the histone chaperone activity of ASF1. Cell 127: 495-508.
5. Antczak, A.J., et al. 2006. Structure of the yeast Histone H3-ASF1 interaction: implications for chaperone mechanism, species-specific interactions, and epigenetics. BMC Struct. Biol. 6: 26.
6. Mousson, F., et al. 2007. The histone chaperone ASF1 at the crossroads of chromatin and DNA checkpoint pathways. Chromosoma 116: 79-93.
7. Agez, M., et al. 2007. Structure of the histone chaperone ASF1 bound to the Histone H3 C-terminal helix and functional insights. Structure 15: 191-199.

CHROMOSOMAL LOCATION

Genetic locus: ASF1A (human) mapping to 6q22.31, ASF1B (human) mapping to 19p13.12; Asf1a (mouse) mapping to 10 B3, Asf1b (mouse) mapping to 8 C3.

SOURCE

ASF1A/B (4A1/3) is a mouse monoclonal antibody raised against FLAG-ASF1A 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.

ASF1A/B (4A1/3) is available conjugated to agarose (sc-53171 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53171 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53171 PE), fluorescein (sc-53171 FITC), Alexa Fluor® 488 (sc-53171 AF488), Alexa Fluor® 546 (sc-53171 AF546), Alexa Fluor® 594 (sc-53171 AF594) or Alexa Fluor® 647 (sc-53171 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53171 AF680) or Alexa Fluor® 790 (sc-53171 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ASF1A/B (4A1/3) is recommended for detection of ASF1A and ASF1B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

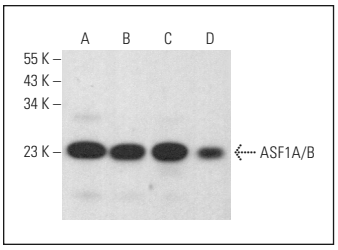
Molecular Weight of ASF1A/B: 23/22 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, Jurkat nuclear extract: sc-2132 or K-562 whole cell lysate: sc-2203.

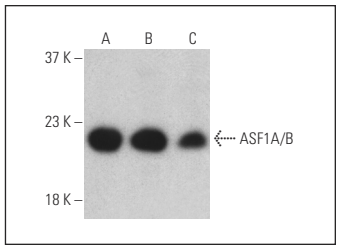
RECOMMENDED SUPPORT REAGENTS

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).

DATA



ASF1A/B (4A1/3): sc-53171. Western blot analysis of ASF1A/B expression in HEL 92.1.7 (**A**), K-562 (**B**), Jurkat (**C**) and MOLT-4 (**D**) whole cell lysates.



ASF1A/B (4A1/3): sc-53171. Western blot analysis of ASF1A/B expression in Jurkat nuclear extract (**A**) and MOLT-4 (**B**) and HEL 92.1.7 (**C**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Kadyrova, L.Y., et al. 2013. Human CAF-1-dependent nucleosome assembly in a defined system. Cell Cycle 12: 3286-3297.
2. Rodriges Blanko, E., et al. 2016. DNA mismatch repair interacts with CAF-1- and ASF1A-H3-H4-dependent Histone (H3-H4)2 tetramer deposition. J. Biol. Chem. 291: 9203-9217.
3. Mortuza, G.B., et al. 2018. Molecular basis of tousled-like kinase 2 activation. Nat. Commun. 9: 2535.
4. Thakar, T., et al. 2022. Lagging strand gap suppression connects BRCA-mediated fork protection to nucleosome assembly through PCNA-dependent CAF-1 recycling. Nat. Commun. 13: 5323.

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.