SANTA CRUZ BIOTECHNOLOGY, INC.

MacroH2A1 (I-11): sc-161812

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The Power to Question

BACKGROUND

Eukaryotic histones are water soluble, basic nuclear proteins that form hetero-octameric nucleosome particles by wrapping 146 base pairs of DNA in a left-handed super-helical turn sequentially to form chromosomal fiber. Two molecules of each of the four core histones (H2A, H2B, H3, and H4) form the octamer. The octamer consists of 2 H2A-H2B dimers and 2 H3-H4 dimers, forming two nearly symmetrical halves by tertiary structure. MacroH2A1, also known as H2AFY (H2A histone family, member Y), MacroH2A1.2, MacroH2A1.1, H2A/y, H2AFJ or mH2A1, is a 372 amino acid ubiquitously expressed nuclear histone variant that is enriched in inactive X chromosome chromatin and senescence-associated heterochromatin. Involved in augmentation of signal-regulated transcription, MacroH2A1 exists as three alternatively spliced isoforms, contains one histone H2A domain and a single Macro domain.

REFERENCES

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2. Pehrson, J.R., Costanzi, C. and Dharia, C. 1997. Developmental and tissue expression patterns of histone MacroH2A1 subtypes. J. Cell. Biochem. 65: 107-113.
3. Mermoud, J.E., Costanzi, C., Pehrson, J.R. and Brockdorff, N. 1999. Histone MacroH2A1.2 relocates to the inactive X chromosome after initiation and propagation of X-inactivation. J. Cell Biol. 147: 1399-1408.
4. Ma, Y., Jacobs, S.B., Jackson-Grusby, L., Mastrangelo, M.A., Torres-Betancourt, J.A., Jaenisch, R. and Rasmussen, T.P. 2005. DNA CpG hypomethylation induces heterochromatin reorganization involving the histone variant MacroH2A. J. Cell Sci. 118: 1607-1616.
5. Chakravarthy, S., Gundimella, S.K., Caron, C., Perche, P.Y., Pehrson, J.R., Khochbin, S. and Luger, K. 2005. Structural characterization of the histone variant MacroH2A. Mol. Cell. Biol. 25: 7616-7624.

CHROMOSOMAL LOCATION

Genetic locus: H2AFY (human) mapping to 5q31.1; H2afy (mouse) mapping to 13 B1.

SOURCE

MacroH2A1 (I-11) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MacroH2A1 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-161812 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-161812 X, 200 µg/0.1 ml.

APPLICATIONS

MacroH2A1 (I-11) is recommended for detection of MacroH2A1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with MacroH2A.

MacroH2A1 (I-11) is also recommended for detection of MacroH2A1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MacroH2A1 siRNA (h): sc-91790, MacroH2A1 siRNA (m): sc-149209, MacroH2A1 shRNA Plasmid (h): sc-91790-SH, MacroH2A1 shRNA Plasmid (m): sc-149209-SH, MacroH2A1 shRNA (h) Lentiviral Particles: sc-91790-V and MacroH2A1 shRNA (m) Lentiviral Particles: sc-149209-V.

MacroH2A1 (I-11) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

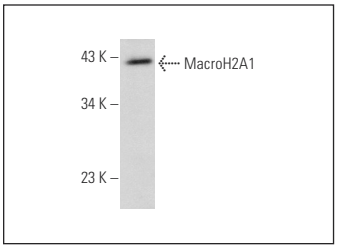
Molecular Weight of MacroH2A1: 39 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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



MacroH2A1 (I-11): sc-161812. Western blot analysis of MacroH2A1 expression in Jurkat nuclear extract.

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.