SANTA CRUZ BIOTECHNOLOGY, INC.

C23 (MS-3): sc-8031

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

C23 (nucleolin, NCL) is a eukaryotic nucleolar phosphoprotein that influences synthesis and maturation of ribosomes. C23 localizes to dense fibrillar regions of the nucleolus. It contains four RNA binding domains that interact with pre-rRNA during synthesis. C23 can influence RNA processing, ribosomal gene transcription and nucleolar targeting of ribosomal components. It is known to associate with a variety of proteins, including the nucleolar protein B23. Phosphorylation by Cdc2 and casein kinase II causes translocation of C23 from the nucleolus to the cytoplasm. Mitotic phosphorylated forms of Bcl-2 are present in nuclear structures in prophase Hela cells together with C23 and Ki-67. Retinoic acid-induced apoptosis leads to C23 down-regulation and Bcl-2 mRNA instability. C23 binds the human telomerase reverse transcriptase subunit (TERT) through interactions with its RNA binding domain 4 and carboxyl-terminal RGG domain, and this interaction is critical for the nucleolar localization of human TERT.

REFERENCES

1. Lischwe, M.A., et al. 1981. Localization of phosphoprotein C23 to nucleolar structures and to the nucleolus organizer regions. Exp. Cell Res. 136: 101-109.
2. Lapeyre, B., et al. 1986. Protein and cDNA sequence of a glycine-rich, dimethylarginine-containing region located near the carboxyl-terminal end of nucleolin (C23 and 100 kDa). J. Biol. Chem. 261: 9167-9173.

CHROMOSOMAL LOCATION

Genetic locus: NCL (human) mapping to 2q37.1; Ncl (mouse) mapping to 1 D.

SOURCE

C23 (MS-3) is a mouse monoclonal antibody raised against amino acids 1-706 representing full length C23 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.

C23 (MS-3) is available conjugated to agarose (sc-8031 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8031 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8031 PE), fluorescein (sc-8031 FITC), Alexa Fluor® 488 (sc-8031 AF488), Alexa Fluor® 546 (sc-8031 AF546), Alexa Fluor® 594 (sc-8031 AF594) or Alexa Fluor® 647 (sc-8031 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8031 AF680) or Alexa Fluor® 790 (sc-8031 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, C23 (MS-3) is available conjugated to TRITC (sc-8031 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

STORAGE

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

APPLICATIONS

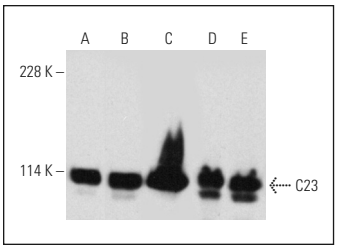
C23 (MS-3) is recommended for detection of C23 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for C23 siRNA (h): sc-29230, C23 siRNA (m): sc-29231, C23 shRNA Plasmid (h): sc-29230-SH, C23 shRNA Plasmid (m): sc-29231-SH, C23 shRNA (h) Lentiviral Particles: sc-29230-V and C23 shRNA (m) Lentiviral Particles: sc-29231-V.

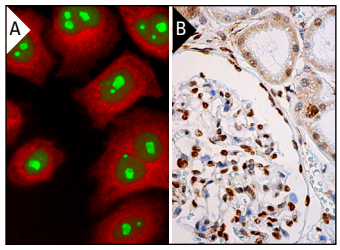
Molecular Weight of C23: 110 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, K-562 whole cell lysate: sc-2203 or CCRF-CEM cell lysate: sc-2225.

DATA



C23 (MS-3) HRP: sc-8031 HRP. Direct western blot analysis of C23 expression in Jurkat (**A**), K-562 (**B**) and CCRF-CEM (**C**) whole cell lysates and Jurkat (**D**) and K-562 (**E**) nuclear extracts.



C23 (MS-3) Alexa Fluor® 488: sc-8031 AF488 and HCAM (DF1485) PE: sc-7297 PE. Direct immunofluorescence staining of formalin-fixed HeLa cells showing nucleolar and nuclear (green) and membrane (red) localization (**A**). C23 (MS-3): sc-8031. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Ko, Y.G., et al. 2000. Nucleolar localization of human methionyl-tRNA synthetase and its role in ribosomal RNA synthesis. J. Cell Biol. 139: 567-574.
2. Joo, E.J., et al. 2018. Pre-B acute lymphoblastic leukemia expresses cell surface nucleolin as a 9-O-acetylated sialoglycoprotein. Sci. Rep. 8: 17174.
3. Frank, A.C., et al. 2019. Apoptotic tumor cell-derived microRNA-375 uses CD36 to alter the tumor-associated macrophage phenotype. Nat. Commun. 10: 1135.
4. Ye, C., et al. 2020. BCCIP is required for nucleolar recruitment of eIF6 and 12S pre-rRNA production during 60S ribosome biogenesis. Nucleic Acids Res. 48: 12817-12832.
5. Guarnaccia, A.D., et al. 2021. Impact of WIN site inhibitor on the WDR5 interactome. Cell Rep. 34: 108636.

RESEARCH USE

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