SANTA CRUZ BIOTECHNOLOGY, INC.

RBP2 (G-12): sc-365993

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Rb (retinoblastoma protein) is a potent transcriptional regulator that is directly involved with events such as entry into cell division and formation of heterochromatin. RBP2 (retinoblastoma-binding protein 2), also known as RBBP2, JARID1A (jumonji/ARID domain-containing protein 1A) or KDM5A, is a nuclear protein that belongs to the JARID1 histone demethylase family. Expressed ubiquitously, RBP2 functions as a histone demethylase that, in conjunction with other proteins, binds directly to the viral-binding domain of Rb, thereby regulating Rb-mediated cell proliferation events. In addition, RBP2 can bind to the Rb-interacting protein rhombotin-2 (LMO2) and, through this interaction, can indirectly modulate Rb activity. Via its demethylase activity, RBP2 can remove methyl residues from Histone H3, thus playing a crucial role in the histone code. RBP2 contains one ARID domain, three PHD-type zinc fingers, one JMJN domain and one JMJC domain through which it conveys its enzymatic activity. Multiple isoforms of RBP2 exist due to alternative splicing events.

REFERENCES

1. Defeo-Jones, D., et al. 1991. Cloning of cDNAs for cellular proteins that bind to the retinoblastoma gene product. Nature 352: 251-254.
2. Fattaey, A.R., et al. 1993. Characterization of the retinoblastoma binding proteins RBP1 and RBP2. Oncogene 8: 3149-3156.
3. Mao, S., et al. 1997. T-cell oncogene rhombotin-2 interacts with retinoblastoma-binding protein 2. Oncogene 14: 1531-1539.
4. Chan, S.W., et al. 2001. Retinoblastoma-binding protein 2 (Rbp2) potentiates nuclear hormone receptor-mediated transcription. J. Biol. Chem. 276: 28402-28412.
5. Benevolenskaya, E.V., et al. 2005. Binding of pRB to the PHD protein RBP2 promotes cellular differentiation. Mol. Cell 18: 623-635.

CHROMOSOMAL LOCATION

Genetic locus: KDM5A (human) mapping to 12p13.33; Kdm5a (mouse) mapping to 6 F1.

SOURCE

RBP2 (G-12) is a mouse monoclonal antibody raised against amino acids 801-900 mapping within an internal region of RBP2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RBP2 (G-12) is available conjugated to agarose (sc-365993 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365993 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365993 PE), fluorescein (sc-365993 FITC), Alexa Fluor® 488 (sc-365993 AF488), Alexa Fluor® 546 (sc-365993 AF546), Alexa Fluor® 594 (sc-365993 AF594) or Alexa Fluor® 647 (sc-365993 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365993 AF680) or Alexa Fluor® 790 (sc-365993 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

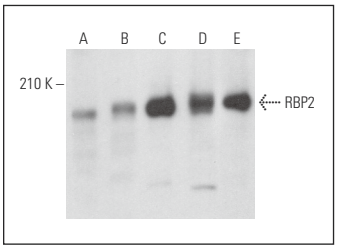
RBP2 (G-12) is recommended for detection of RBP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 RBP2 siRNA (h): sc-96023, RBP2 siRNA (m): sc-152763, RBP2 shRNA Plasmid (h): sc-96023-SH, RBP2 shRNA Plasmid (m): sc-152763-SH, RBP2 shRNA (h) Lentiviral Particles: sc-96023-V and RBP2 shRNA (m) Lentiviral Particles: sc-152763-V.

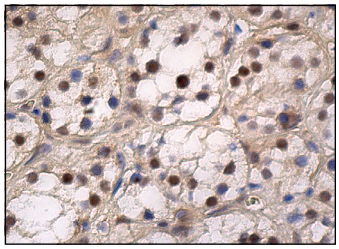
Molecular Weight of RBP2: 195 kDa.

Positive Controls: MCF7 nuclear extract: sc-2149, HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

DATA



RBP2 (G-12): sc-365993. Western blot analysis of RBP2 expression in HeLa (**A**), NIH/3T3 (**B**), MES-SA/Dx5 (**C**) and F9 (**D**) whole cell lysates and MCF7 nuclear extract (**E**).



RBP2 (G-12): sc-365993. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Hoekstra, M., et al. 2021. Identification of *in vitro* JMJD lysine demethylase candidate substrates via systematic determination of substrate preference. Anal. Biochem. 633: 114429.
2. Hoekstra, M., et al. 2022. Characterization of KDM5 lysine demethylase family substrate preference and identification of novel substrates. J. Biochem. 173: 31-42.
3. Kirtana, R., et al. 2023. KDM5A noncanonically binds antagonists MLL1/2 to mediate gene regulation and promotes epithelial to mesenchymal transition. Biochim. Biophys. Acta Gene Regul. Mech. 1866: 194986.

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.