SANTA CRUZ BIOTECHNOLOGY, INC.

RBP2 siRNA (h): sc-96023

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. and Hong, W. 2001. Retinoblastoma-binding protein 2 (RBP2) potentiates nuclear hormone receptor-mediated transcription. J. Biol. Chem. 276: 28402-28412.

CHROMOSOMAL LOCATION

Genetic locus: KDM5A (human) mapping to 12p13.33.

PRODUCT

RBP2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RBP2 shRNA Plasmid (h): sc-96023-SH and RBP2 shRNA (h) Lentiviral Particles: sc-96023-V as alternate gene silencing products.

For independent verification of RBP2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-96023A, sc-96023B and sc-96023C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RBP2 siRNA (h) is recommended for the inhibition of RBP2 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

RBP2 (G-12): sc-365993 is recommended as a control antibody for monitoring of RBP2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RBP2 gene expression knockdown using RT-PCR Primer: RBP2 (h)-PR: sc-96023-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Qiu, M.T., et al. 2015. KDM4B and KDM4A promote endometrial cancer progression by regulating androgen receptor, c-Myc, and $p27^{kip1}$. Oncotarget 6: 31702-31720.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.