SANTA CRUZ BIOTECHNOLOGY, INC.

RCC2 siRNA (h): sc-62932

BACKGROUND

RCC2 (regulator of chromosome condensation 2), also known as KIAA1470 or TD60, is a 522 amino acid protein that contains seven RCC1 repeats and is expressed in a variety of mammalian tissues. Localized to the nucleus, as well as to centromeres and the midzone of the mitotic spindle in a cell-cycle dependent manner, RCC2 binds to Rac 1 and is required for the completion of mitosis and cytokinesis, possibly functioning as a guanine nucleotide exchange factor for Rac 1. RCC2 is subject to DNA damage-dependent phosphorylation, probably by ATM or ATR. The gene encoding RCC2 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Andreassen, P.R., et al. 1991. Telophase disc: a new mammalian mitotic organelle that bisects telophase cells with a possible function in cytokinesis. J. Cell Sci. 99: 523-534.
2. Martineau-Thuillier, S., et al. 1998. Colocalization of TD-60 and INCENP throughout G_2 and mitosis: evidence for their possible interaction in signalling cytokinesis. Chromosoma 107: 461-470.
3. Mollinari, C., et al. 2003. The mammalian passenger protein TD-60 is an RCC1 family member with an essential role in prometaphase to metaphase progression. Dev. Cell 5: 295-307.
4. Yang, F., et al. 2007. Identification of a novel mitotic phosphorylation motif associated with protein localization to the mitotic apparatus. J. Cell Sci. 120: 4060-4070.
5. Stacey, S.N., et al. 2008. Common variants on 1p36 and 1q42 are associated with cutaneous basal cell carcinoma but not with melanoma or pigmentation traits. Nat. Genet. 40: 1313-1318.
6. Rosasco-Nitcher, S.E., et al. 2008. Centromeric aurora-B activation requires TD-60, microtubules, and substrate priming phosphorylation. Science 319: 469-472.

CHROMOSOMAL LOCATION

Genetic locus: RCC2 (human) mapping to 1p36.13.

PRODUCT

RCC2 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 RCC2 shRNA Plasmid (h): sc-62932-SH and RCC2 shRNA (h) Lentiviral Particles: sc-62932-V as alternate gene silencing products.

For independent verification of RCC2 (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-62932A, sc-62932B and sc-62932C.

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

RCC2 siRNA (h) is recommended for the inhibition of RCC2 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

RCC2 (T-20): sc-68776 is recommended as a control antibody for monitoring of RCC2 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 (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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RCC2 gene expression knockdown using RT-PCR Primer: RCC2 (h)-PR: sc-62932-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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