SANTA CRUZ BIOTECHNOLOGY, INC.

CIP2A siRNA (h): sc-77964

BACKGROUND

Cancerous inhibitor of protein phosphatase 2A (CIP2A), also designated p90 autoantigen or KIAA1524, is a single-pass membrane protein that exhibits oncogenic activity. CIP2A is known to inhibit PP2A (protein phosphatase 2A) dephosphorylation of c-Myc, thereby stabilizing c-Myc (an oncogenic transcription factor) and promoting tumor formation and malignant cell growth. PP2A is a trimeric protein complex consisting of three subunits: a scaffold subunit, a catalytic subunit and a regulatory subunit. CIP2A specifically interacts with the catalytic subunit of PP2A to inhibit its activity. Inhibition of PP2A activity is a crucial step allowing for the progression of human cell transformation. Further supporting its role as an oncoprotein, CIP2A is known to be overexpressed in colon, gastric and head and neck squamous cell carcinomas.

REFERENCES

1. Janssens, V. and Goris, J. 2001. Protein phosphatase 2A: a highly regulated family of serine/threonine phosphatases implicated in cell growth and signalling. Biochem. J. 353: 417-439.
2. Soo Hoo, L., et al. 2002. Cloning and characterization of a novel 90 kDa "companion" auto-antigen of p62 overexpressed in cancer. Oncogene 21: 5006-5015.
3. Shi, F.D., et al. 2005. Preferential humoral immune response in prostate cancer to cellular proteins p90 and p62 in a panel of tumor-associated antigens. Prostate 63: 252-258.
4. Arnold, H.K. and Sears, R.C. 2006. Protein phosphatase 2A regulatory subunit B56α associates with c-Myc and negatively regulates c-Myc accumulation. Mol. Cell. Biol. 26: 2832-2844.

CHROMOSOMAL LOCATION

Genetic locus: KIAA1524 (human) mapping to 3q13.13.

PRODUCT

CIP2A 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 CIP2A shRNA Plasmid (h): sc-77964-SH and CIP2A shRNA (h) Lentiviral Particles: sc-77964-V as alternate gene silencing products.

For independent verification of CIP2A (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-77964A, sc-77964B and sc-77964C.

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

CIP2A siRNA (h) is recommended for the inhibition of CIP2A 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

CIP2A (HL1925): sc-80662 is recommended as a control antibody for monitoring of CIP2A 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 CIP2A gene expression knockdown using RT-PCR Primer: CIP2A (h)-PR: sc-77964-PR (20 µl, 589 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lucas, C.M., et al. 2011. Cancerous inhibitor of PP2A (CIP2A) at diagnosis of chronic myeloid leukemia is a critical determinant of disease progression. Blood 117: 6660-6668.
2. Wang, C.Y., et al. 2014. CIP2A mediates erlotinib-induced apoptosis in non-small cell lung cancer cells without EGFR mutation. Lung Cancer 85: 152-160.
3. Kim, S.H., et al. 2019. The role of CIP2A as a therapeutic target of rapamycin in radioresistant head and neck cancer with TP53 mutation. Head Neck. E-published.

RESEARCH USE

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