SANTA CRUZ BIOTECHNOLOGY, INC.

AKIP siRNA (h): sc-72472

BACKGROUND

AKIP (AURKA-interacting protein), also known as AURKAIP1 (aurora kinase A interacting protein 1) or AIP, is a 199 amino acid protein that localizes to the nucleus and is ubiquitously expressed, with highest levels present in testis, heart and skeletal muscle. Interacting specifically with ARK-1 (aurora kinase 1), AKIP functions to induce the proteasomal-dependent degradation of ARK-1, thereby acting as a negative regulator of ARK-1 activity. AKIP is encoded by a gene which maps to human chromosome 1p36.33, 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

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2. Hirota, T., Kunitoku, N., Sasayama, T., Marumoto, T., Zhang, D., Nitta, M., Hatakeyama, K. and Saya, H. 2003. Aurora-A and an interacting activator, the LIM protein Ajuba, are required for mitotic commitment in human cells. Cell 114: 585-598.
3. Sun, T., Miao, X., Wang, J., Tan, W., Zhou, Y., Yu, C. and Lin, D. 2004. Functional Phe31Ile polymorphism in Aurora A and risk of breast carcinoma. Carcinogenesis 25: 2225-2230.
4. Katayama, H., Sasai, K., Czerniak, B.A., Carter, J.L. and Sen, S. 2007. Aurora-A kinase phosphorylation of Aurora-A kinase interacting protein (AIP) and stabilization of the enzyme-substrate complex. J. Cell. Biochem. 102: 1318-1331.
5. Lim, S.K. and Gopalan, G. 2007. Antizyme1 mediates AURKAIP1-dependent degradation of Aurora-A. Oncogene 26: 6593-6603.
6. Fumoto, K., Fumoto, K., Lee, P.C., Saya, H. and Kikuchi, A. 2008. AIP regulates stability of Aurora-A at early mitotic phase coordinately with GSK-3β. Oncogene 27: 4478-4487.

CHROMOSOMAL LOCATION

Genetic locus: AURKAIP1 (human) mapping to 1p36.33.

PRODUCT

AKIP 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 AKIP shRNA Plasmid (h): sc-72472-SH and AKIP shRNA (h) Lentiviral Particles: sc-72472-V as alternate gene silencing products.

For independent verification of AKIP (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-72472A, sc-72472B and sc-72472C.

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

AKIP siRNA (h) is recommended for the inhibition of AKIP 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AKIP gene expression knockdown using RT-PCR Primer: AKIP (h)-PR: sc-72472-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. Park, J.H., Jong, H.S., Kim, S.G., Jung, Y., Lee, K.W., Lee, J.H., Kim, D.K., Bang, Y.J. and Kim, T.Y. 2008. Inhibitors of histone deacetylases induce tumor-selective cytotoxicity through modulating Aurora-A kinase. J. Mol. Med. 86: 117-128.
2. Cohen, M.R., Johnson, W.M., Pilat, J.M., Kiselar, J., DeFrancesco-Lisowitz, A., Zigmond, R.E. and Moiseenkova-Bell, V.Y. 2015. Nerve growth factor regulates transient receptor potential vanilloid 2 via extracellular signal-regulated kinase signaling to enhance neurite outgrowth in developing neurons. Mol. Cell. Biol. 35: 4238-4252.

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.