SANTA CRUZ BIOTECHNOLOGY, INC.

Paip2 siRNA (h): sc-40802

BACKGROUND

Paip, for PABP-interacting protein, binds to the polyadenylate-binding protein (PABP). There are two Paip proteins called Paip1 and Paip2. Paip1 stimulates translation, and Paip2, which competes with Paip1 for binding to PABP, represses translation. Paip1 contains a region similar to the central portion of eIF4G. Paip2 decreases the affinity of PABP for polyadenylate RNA, and disrupts the repeating structure of poly(A) ribonucleoprotein. Paip2 contains two binding sites for PABP, one encompassing a 16-amino-acid stretch located in the C terminus and a second encompassing a larger central region. There is a two-to-one stoichiometry for binding of Paip2 to PABP indicating that they could form a trimeric complex containing one PABP molecule and two Paip2 molecules. Significantly, only the central Paip2 fragment, which binds with high affinity to the PABP RRM region, inhibits PABP binding to poly(A) RNA and translation. Translation in extracts in which eIF4G is cleaved is resistant to inhibition by Paip2. The human Paip2 gene maps to chromosome 5q31.2 and encodes a 127 amino acid protein.

REFERENCES

1. Khaleghpour, K., et al. 2001. Translational repression by a novel partner of human poly(A) binding protein, Paip2. Mol. Cell 7: 205-216.
2. Khaleghpour, K., et al. 2001. Dual interactions of the translational repressor Paip2 with poly(A) binding protein. Mol. Cell. Biol. 21: 5200-5213.
3. Svitkin, Y.V., et al. 2001. Poly(A)-binding protein interaction with eIF4G stimulates picornavirus IRES-dependent translation. RNA 7: 1743-1752.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605604. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: PAIP2 (human) mapping to 5q31.2.

PRODUCT

Paip2 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 Paip2 shRNA Plasmid (h): sc-40802-SH and Paip2 shRNA (h) Lentiviral Particles: sc-40802-V as alternate gene silencing products.

For independent verification of Paip2 (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-40802A, sc-40802B and sc-40802C.

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

Paip2 siRNA (h) is recommended for the inhibition of Paip2 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

Paip2 (C-8): sc-365317 is recommended as a control antibody for monitoring of Paip2 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 Paip2 gene expression knockdown using RT-PCR Primer: Paip2 (h)-PR: sc-40802-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.

PROTOCOLS

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