SANTA CRUZ BIOTECHNOLOGY, INC.

eIF1AY siRNA (h): sc-91551

BACKGROUND

Ribosomes, made of Ribonucleoprotein, are the cellular machinery used to catalyze assembly of amino acids into polypeptide chains translated from a template messenger RNA sequence. In eukaryotes, the ribosome consists of a 40S (small) and a 60S (large) subunit. Protein synthesis initiates through the binding of mRNA to the 40S subunit followed by an aminoacylated tRNA and the 60S subunit. The initiating charged tRNA, which base pairs with an AUG start codon on the mRNA, is bound to the essential amino acid methionine (Met). eIF1AY (eukaryotic translation initiation factor 1A, Y-chromosomal), also known as eIF-1A Y isoform and eIF-4C, is a 144 amino acid protein that is ubiquitously expressed and is thought to enhance protein biosynthesis. Ribosomal subunit dissociation and binding of the 40S subunit to Met-tRNA is assisted by eIF1AY. eIF1AY, a cytoplasmic protein, is encoded by a gene in the nonrecombining region of the Y chromosome (NRY) in human and on chromosome 18 in mouse and rat where it is known as eIF1A. eIF-1AX, a related protein known as eIF1AY in mouse, is a 144 amino acid protein encoded by the X chromosome in human, mouse, and rat. eIF1AY and eIF1AX contain a single S1-like domain.

REFERENCES

1. Lahn, B.T. and Page, D.C. 1997. Functional coherence of the human Y chromosome. Science 278: 675-680.
2. Krausz, C., Bussani-Mastellone, C., Granchi, S., McElreavey, K., Scarselli, G. and Forti, G. 1999. Screening for microdeletions of Y chromosome genes in patients undergoing intracytoplasmic sperm injection. Hum. Reprod. 14: 1717-1721.
3. Lau, Y.F. and Zhang, J. 2000. Expression analysis of thirty one Y chromosome genes in human prostate cancer. Mol. Carcinog. 27: 308-321.
4. Kleiman, S.E., Yogev, L., Hauser, R., Botchan, A., Maymon, B.B., Paz, G. and Yavetz, H. 2007. Expression profile of AZF genes in testicular biopsies of azoospermic men. Hum. Reprod. 22: 151-158.

CHROMOSOMAL LOCATION

Genetic locus: EIF1AY (human) mapping to Yq11.223.

PRODUCT

eIF1AY 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 eIF1AY shRNA Plasmid (h): sc-91551-SH and eIF1AY shRNA (h) Lentiviral Particles: sc-91551-V as alternate gene silencing products.

For independent verification of eIF1AY (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-91551A, sc-91551B and sc-91551C.

PROTOCOLS

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

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

eIF1AY siRNA (h) is recommended for the inhibition of eIF1AY 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

eIF1AY (1B4): sc-517065 is recommended as a control antibody for monitoring of eIF1AY 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 eIF1AY gene expression knockdown using RT-PCR Primer: eIF1AY (h)-PR: sc-91551-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.