SANTA CRUZ BIOTECHNOLOGY, INC.

eIF3M siRNA (m): sc-144616

BACKGROUND

The initiation of protein synthesis in eukaryotic cells is regulated by interactions between protein initiation factors and RNA molecules. Eukaryotic initiation factors (eIFs) are utilized in a sequence of reactions that lead to 80S ribosomal assembly and, ultimately, translation. The eukaryotic initiation factor-3 (eIF3) scaffolding structure is the largest of the eIF complexes and in-cludes eIF3α, eIF3β, eIF3γ, eIF3δ, eIF3ε, eIF3ζ, eIF3η, eIF3θ and eIF3M, all of which function to control the assembly of the 40S ribosomal subunit. As-sociation of eIF3 proteins with the 40S ribosomal subunit stabilizes eIF2-GTP-Met-tRNAiMet complex association and mRNA binding, and promotes dissociation of 80S ribosomes into 40S and 60S subunits, thereby promoting the assembly of the pre-initiation complex. eIF3M (eukaryotic translation initiation factor 3, subunit M), also known as HFLB5 or PCID1, is a 374 amino acid protein that localizes to the cytoplasm where it exists as a component of the eIF3 complex and plays a role in translation.

REFERENCES

1. Valásek, L., et al. 2004. Interactions of eukaryotic translation initiation factor 3 (eIF3) subunit NIP1/c with eIF1 and eIF5 promote preinitiation complex assembly and regulate start codon selection. Mol. Cell. Biol. 24: 9437-9455.
2. Peterson, T.R., et al. 2005. eIF3: a connecTOR of S6K1 to the translation preinitiation complex. Mol. Cell 20: 655-657.
3. Dong, Z., et al. 2006. Initiation factor eIF3 and regulation of mRNA translation, cell growth, and cancer. Crit. Rev. Oncol. Hematol. 59: 169-180.
4. LeFebvre, A.K., et al. 2006. Translation initiation factor eIF4G-1 binds to eIF3 through the eIF3e subunit. J. Biol. Chem. 281: 22917-22932.
5. Hinnebusch, A.G. 2006. eIF3: a versatile scaffold for translation initiation complexes. Trends Biochem. Sci. 31: 553-562.
6. Masutani, M., et al. 2007. Reconstitution reveals the functional core of mammalian eIF3. EMBO J. 26: 3373-3383.
7. Zhang, L., et al. 2007. Individual overexpression of five subunits of human translation initiation factor eIF3 promotes malignant transformation of immortal fibroblast cells. J. Biol. Chem. 282: 5790-5800.
8. Sato, H., et al. 2007. Measles virus N protein inhibits host translation by binding to eIF3-p40. J. Virol. 81: 11569-11576.

CHROMOSOMAL LOCATION

Genetic locus: Eif3m (mouse) mapping to 2 E2.

PRODUCT

eIF3M siRNA (m) is a target-specific 19-25 nt siRNA 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 eIF3M shRNA Plasmid (m): sc-144616-SH and eIF3M shRNA (m) Lentiviral Particles: sc-144616-V as alternate gene silencing 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

eIF3M siRNA (m) is recommended for the inhibition of eIF3M expression in mouse 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 eIF3M gene expression knockdown using RT-PCR Primer: eIF3M (m)-PR: sc-144616-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.