SANTA CRUZ BIOTECHNOLOGY, INC.

Apg-1 siRNA (m): sc-40651

BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, which include the assembly and sequestering of multiprotein complexes, transportation of nascent polypeptide chains across cellular membranes and regulation of protein folding. Heat shock proteins (also known as molecular chaperones) fall into six general families: HSP 90, HSP 70, HSP 60, the low molecular weight HSPs, the immunophilins and the HSP 110 family. The HSP 110 family (also known as the HSP 105 family) is composed of HSP 105, Apg-1 and Apg-2. Apg-1, also known as HSPA4L (heat shock 70 kDa protein 4-like) or Osp94 (osmotic stress protein 94), is an 839 amino acid protein that possesses chaperone activity *in vitro,* where it inhibits aggregation of citrate synthase. A homodimer, Apg-1 subcellularly localizes to cytoplasm and nucleus, and may translocate to nucleus after heat shock.

REFERENCES

1. Schlesinger, M.J., et al. 1982. Heat Shock: from Bacteria to Man. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory.
2. Hatayama, T., et al. 1992. Effects of low culture temperature on the induction of HSP 70 mRNA and the accumulation of HSP 70 and HSP 105 in mouse FM3A cells. J. Biochem. 111: 484-490.
3. Georgopoulos, C., et al. 1993. Role of the major heat shock proteins as molecular chaperones. Annu. Rev. Cell Biol. 9: 601-634.
4. Todd, M.J., et al. 1994. Dynamics of the chaperonin ATPase cycle: implications for facilitated protein folding. Science 265: 659-666.
5. Yasuda, K., et al. 1995. Cloning and expression of murine high molecular mass heat shock proteins, HSP 105. J. Biol. Chem. 270: 29718-29723.
6. Kaneko, Y., et al. 1997. Cloning of Apg-2 encoding a novel member of heat shock protein family. Gene 189: 19-24.
7. Xue, J.H., et al. 1998. Induction of Apg-1, a member of the HSP 110 family, following transient forebrain ischemia in the rat brain. Biochem. Biophys. Res. Commun. 247: 796-801.
8. Kumagai, J., et al. 2000. Germ cell-specific heat shock protein 105 binds to p53 in a temperature-sensitive manner in rat testis. Eur. J. Biochem. 267: 3073-3078.

CHROMOSOMAL LOCATION

Genetic locus: Hspa4l (mouse) mapping to 3 B.

PRODUCT

Apg-1 siRNA (m) 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 Apg-1 shRNA Plasmid (m): sc-40651-SH and Apg-1 shRNA (m) Lentiviral Particles: sc-40651-V as alternate gene silencing products.

For independent verification of Apg-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-40651A, sc-40651B and sc-40651C.

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

Apg-1 siRNA (m) is recommended for the inhibition of Apg-1 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.

GENE EXPRESSION MONITORING

Apg-1 (D-12): sc-133253 is recommended as a control antibody for monitoring of Apg-1 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 Apg-1 gene expression knockdown using RT-PCR Primer: Apg-1 (m)-PR: sc-40651-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.