SANTA CRUZ BIOTECHNOLOGY, INC.

LAMTOR4 siRNA (m): sc-108127

BACKGROUND

LAMTOR4 (late endosomal/lysosomal adaptor and MAPK and MTOR activator 4), also known as C7orf59, is a 99 amino acid protein belonging to the LAMTOR4 family. Localizing to the lysosome, LAMTOR4 is part of a Ragulator complex composed of LAMTOR 1, 2, 3, and 5. The Ragulator complex interacts with the mTORC1 complex, which promotes cell growth in response to growth factors, energy levels and amino acids. Acting as a guanine nucleotide exchange factor, the Ragulator complex activates small Rag GTPases, which then function as a scaffold for the recruitment and activation of mTORC1 to the lysosome. The gene encoding LAMTOR4 maps to human chromosome 7q22.1 and mouse chromosome 5 G2.

REFERENCES

1. Lunin, V.V., Munger, C., Wagner, J., Ye, Z., Cygler, M. and Sacher, M. 2004. The structure of the MAPK scaffold, MP1, bound to its partner, p14. A complex with a critical role in endosomal map kinase signaling. J. Biol. Chem. 279: 23422-23430.
2. Sancak, Y., Bar-Peled, L., Zoncu, R., Markhard, A.L., Nada, S. and Sabatini, D.M. 2010. Ragulator-Rag complex targets mTORC1 to the lysosomal surface and is necessary for its activation by amino acids. Cell 141: 290-303.
3. Burkard, T.R., Planyavsky, M., Kaupe, I., Breitwieser, F.P., Bürckstümmer, T., Bennett, K.L., Superti-Furga, G. and Colinge, J. 2011. Initial characterization of the human central proteome. BMC Syst. Biol. 5: 17.
4. Bar-Peled, L., Schweitzer, L.D., Zoncu, R. and Sabatini, D.M. 2012. Ragulator is a GEF for the Rag GTPases that signal amino acid levels to mTORC1. Cell 150: 1196-1208.

CHROMOSOMAL LOCATION

Genetic locus: Lamtor4 (mouse) mapping to 5 G2.

PRODUCT

LAMTOR4 siRNA (m) is a pool of 2 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 LAMTOR4 shRNA Plasmid (m): sc-108127-SH and LAMTOR4 shRNA (m) Lentiviral Particles: sc-108127-V as alternate gene silencing products.

For independent verification of LAMTOR4 (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-108127A and sc-108127B.

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

LAMTOR4 siRNA (m) is recommended for the inhibition of LAMTOR4 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 LAMTOR4 gene expression knockdown using RT-PCR Primer: LAMTOR4 (m)-PR: sc-108127-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.