SANTA CRUZ BIOTECHNOLOGY, INC.

ALS siRNA (h): sc-60154

BACKGROUND

The Insulin-like growth factor binding proteins, or IGFBPs, are a family of seven proteins that have co-evolved with the IGFs. IGFBPs serve as shuttle molecules for both IGF-I and IGF-II and confer a level of regulation to the IGF signaling system by influencing the bio-availability, concentration and distribution of IGFs in the extracellular environment. In human circulation, the IGF-binging protein complex requires ALS (IGFBP acid-labile subunit), an extracellular protein involved in receptor-ligand binding and cell adhesion. ALS, detected primarily in plasma, is involved in protein-protein interactions that result in the formation of protein complexes.

REFERENCES

1. Baxter, R.C., et al. 1989. High molecular weight Insulin-like growth factor binding protein complex. Purification and properties of the acid-labile subunit from human serum. J. Biol. Chem. 264: 11843-11848.
2. Leong, S.R., et al. 1992. Structure and functional expression of the acid-labile subunit of the Insulin-like growth factor-binding protein complex. Mol. Endocrinol. 6: 870-876.
3. Fischer, F., et al. 2004. Associations of Insulin-like growth factors, Insulin-like growth factor binding proteins and acid-labile subunit with coronary heart disease. Clin. Endocrinol. 61: 595-602.
4. de Boer, L., et al. 2004. Plasma Insulin-like growth factors (IGFs), IGF-binding proteins (IGFBPs), acid-labile subunit (ALS) and IGFBP3 proteolysis in individuals with clinical characteristics of Sotos syndrome. J. Pediatr. Endocrinol. Metab. 17: 615-627.

CHROMOSOMAL LOCATION

Genetic locus: IGFALS (human) mapping to 16p13.3.

PRODUCT

ALS 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 ALS shRNA Plasmid (h): sc-60154-SH and ALS shRNA (h) Lentiviral Particles: sc-60154-V as alternate gene silencing products.

For independent verification of ALS (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-60154A, sc-60154B and sc-60154C.

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

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

ALS (E-2): sc-377131 is recommended as a control antibody for monitoring of ALS 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 ALS gene expression knockdown using RT-PCR Primer: ALS (h)-PR: sc-60154-PR (20 µl, 588 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Rivas, S., et al. 2020. The RabGEF ALS2 is a hypoxia inducible target associated with the acquisition of aggressive traits in tumor cells. Sci. Rep. 10: 22302.

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.