SANTA CRUZ BIOTECHNOLOGY, INC.

FBXO40 siRNA (m): sc-145125

BACKGROUND

Belonging to the F-box family of proteins, FBXO40 (F-box only protein 40), also designated FBX40, is a 709 amino acid protein that contains one C-terminal F-box domain. F-box proteins are critical components of the SCF (Skp1-CUL-1-F-box protein)-type E3 ubiquitin ligase complex and are involved in substrate recognition and protein recruitment for ubiquitination. They are members of a larger family of proteins that are involved in the regulation of a wide variety of cellular mechanisms, including the cell cycle, the immune response, signaling cascades and developmental processes. They function by targeting proteins, such as cyclins, cyclin-dependent kinase inhibitors, IκB-α and β-catenin, for degradation by the proteasome after ubiquitination. Via its F-box domain, FBXO40 can directly interact with Skp1 p19 and CUL-1. FBXO40 is thought to function as a regulator involved in postnatal myogenesis and shows decreased expression in the dystrophic muscle of patients with limb-girdle muscular dystrophy (LGMD).

REFERENCES

1. Cenciarelli, C., et al. 1999. Identification of a family of human F-box proteins. Curr. Biol. 9: 1177-1179.
2. Winston, J.T., et al. 1999. A family of mammalian F-box proteins. Curr. Biol. 9: 1180-1182.
3. Winston, J.T., et al. 1999. The SCFβ-TRCP-ubiquitin ligase complex associates specifically with phosphorylated destruction motifs in IκB-α and β-catenin and stimulates IκB-α ubiquitination *in vitro.* Genes Dev. 13: 270-283.
4. Craig, K.L., et al. 1999. The F-box: a new motif for ubiquitin dependent proteolysis in cell cycle regulation and signal transduction. Prog. Biophys. Mol. Biol. 72: 299-328.
5. Ilyin, G.P., et al. 2000. cDNA cloning and expression analysis of new members of the mammalian F-box protein family. Genomics 67: 40-47.
6. Schulman, B.A., et al. 2000. Insights into SCF ubiquitin ligases from the structure of the Skp1-Skp2 complex. Nature 408: 381-386.
7. Ilyin, G.P., et al. 2002. A new subfamily of structurally related human F-box proteins. Gene 296: 11-20.

CHROMOSOMAL LOCATION

Genetic locus: Fbxo40 (mouse) mapping to 16 B3.

PRODUCT

FBXO40 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 FBXO40 shRNA Plasmid (m): sc-145125-SH and FBXO40 shRNA (m) Lentiviral Particles: sc-145125-V as alternate gene silencing products.

For independent verification of FBXO40 (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-145125A, sc-145125B and sc-145125C.

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

FBXO40 siRNA (m) is recommended for the inhibition of FBXO40 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 FBXO40 gene expression knockdown using RT-PCR Primer: FBXO40 (m)-PR: sc-145125-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, L., et al. 2020. Stat3 activation induces insulin resistance via a muscle-specific E3 ubiquitin ligase Fbxo40. Am. J. Physiol. Endocrinol. Metab. E-published.

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.