SANTA CRUZ BIOTECHNOLOGY, INC.

FBL7 siRNA (h): sc-62306

BACKGROUND

FBL7 is a 491 amino acid protein encoded by the human gene FBXL7. FBL7 contains one 40 amino acid F-box region, making it a member of the F-box family. FBL7 also contains ten LRR (leucine-rich) repeats. 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 recruitment for ubiquitination. F-box proteins are members of a large family that regulates cell cycle, immune response, signalling cascades and developmental programs by targeting proteins, such as cyclins, cyclin-dependent kinase inhibitors, IκB-α and β-catenin, for degradation by the proteasome after ubiquitination. Localized near the nucleus in the cytoplasm, FBL7 is ubiquitously expressed and believed to recognize and bind to phosphorylated proteins to promote their ubiquitination and degradation.

REFERENCES

1. Winston, J.T., et al. 1999. The SCF$^{\beta\text{-TrCP}}$-ubiquitin ligase complex associates specifically with phosphorylated destruction motifs in IκBα and β-catenin and stimulates IκBα ubiquitination *in vitro*. Genes Dev. 13: 270-283.
2. Cenciarelli, C., et al. 1999. Identification of a family of human F-box proteins. Curr. Biol. 9: 1177-1179.
3. Winston, J.T., et al. 1999. A family of mammalian F-box proteins. Curr. Biol. 9: 1180-1182.
4. Craig, K.L. and Tyers, M. 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.

CHROMOSOMAL LOCATION

Genetic locus: FBXL7 (human) mapping to 5p15.1.

PRODUCT

FBL7 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 FBL7 shRNA Plasmid (h): sc-62306-SH and FBL7 shRNA (h) Lentiviral Particles: sc-62306-V as alternate gene silencing products.

For independent verification of FBL7 (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-62306A, sc-62306B and sc-62306C.

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

FBL7 siRNA (h) is recommended for the inhibition of FBL7 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

FBL7 (A-8): sc-374319 is recommended as a control antibody for monitoring of FBL7 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 FBL7 gene expression knockdown using RT-PCR Primer: FBL7 (h)-PR: sc-62306-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. Li, M., et al. 2020. Promotion of ubiquitination-dependent survivin destruction contributes to xanthohumol-mediated tumor suppression and overcomes radioresistance in human oral squamous cell carcinoma. J. Exp. Clin. Cancer Res. 39: 88.
2. Ni, J., et al. 2021. 7-Ethoxyrosmanol alleviates hyperglycemia-induced vascular endothelial dysfunction by regulating FBXL7 expression. J. Bioenerg. Biomembr. 53: 553-560.
3. Liao, J., et al. 2024. TRAF4 regulates ubiquitination-modulated survivin turnover and confers radioresistance. Int. J. Biol. Sci. 20: 182-199.
4. Wang, R., et al. 2024. Dioscin inhibits non-small cell lung cancer cells and activates apoptosis by downregulation of Survivin. J. Cancer 15: 1366-1377.

RESEARCH USE

For research use only, not for use in diagnostic procedures.