SANTA CRUZ BIOTECHNOLOGY, INC.

FBXO31 siRNA (h): sc-93123

BACKGROUND

FBXO31 (F-box only protein 31) is a 539 amino acid protein that contains one forty amino acid F-box region, making it a member of the F-box family. 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, signaling 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. Functioning as a component of the SCF complex, FBXO31 plays a central role in G_1 arrest following DNA damage by promoting the ubiquitination and degradation by the proteasome of phosphorylated cyclin-D1. FBXO31 may also act as a tumor suppressor in human hepatocellular carcinoma (HCC).

REFERENCES

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2. Winston, J.T., et al. 1999. A family of mammalian F-box proteins. Curr. Biol. 9: 1180-1182.
3. 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.
4. Ilyin, G.P., et al. 2002. A new subfamily of structurally related human F-box proteins. Gene 296: 11-20.
5. Kumar, R., et al. 2005. FBXO31 is the chromosome 16q24.3 senescence gene, a candidate breast tumor suppressor, and a component of an SCF complex. Cancer Res. 65: 11304-11313.
6. Santra, M.K., et al. 2009. F-box protein FBXO31 mediates cyclin D1 degradation to induce G_1 arrest after DNA damage. Nature 459: 722-725.
7. Shiloh, Y. 2009. FBXO31: a new player in the ever-expanding DNA damage response orchestra. Sci. Signal. 2: pe73.
8. Jia, L., et al. 2009. F-box proteins FBXO31 and FBX4 in regulation of cyclin D1 degradation upon DNA damage. Pigment Cell Melanoma Res. 22: 518-519.

CHROMOSOMAL LOCATION

Genetic locus: FBXO31 (human) mapping to 16q24.2.

PRODUCT

FBXO31 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 FBXO31 shRNA Plasmid (h): sc-93123-SH and FBXO31 shRNA (h) Lentiviral Particles: sc-93123-V as alternate gene silencing products.

For independent verification of FBXO31 (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-93123A, sc-93123B and sc-93123C.

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

FBXO31 siRNA (h) is recommended for the inhibition of FBXO31 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FBXO31 gene expression knockdown using RT-PCR Primer: FBXO31 (h)-PR: sc-93123-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.