SANTA CRUZ BIOTECHNOLOGY, INC.

WDR82 siRNA (h): sc-78161

BACKGROUND

WDR82 (WD repeat-containing protein 82), also known as TMEM113 (transmembrane protein 113) or WDR82A, is a 313 amino acid protein that contains six WD repeats and belongs to the WD repeat SWD2 family. Localized to the nucleus, WDR82 is an integral component of the Set1 methyltransferase complex that contains several proteins, including Set1A and Set1B, and functions to specifically methylate the Lysine 4 (Lys 4) residue of Histone H3. The methyltransferase activity of the Set1 complex is crucial for proper H3-mediated assembly of an active chromatin structure that allows transcription to occur. Due its involvement in the Set1 complex, WDR82 may play an essential role in chromatin-modifying events that are permissive to transcription.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611059. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Lee, J.H. and Skalnik, D.G. 2005. CpG-binding protein (CXXC finger protein 1) is a component of the mammalian Set1 histone H3-Lys4 methyltransferase complex, the analogue of the yeast Set1/COMPASS complex. J. Biol. Chem. 280: 41725-41731.
3. Higa, L.A., et al. 2006. CUL4-DDB1 ubiquitin ligase interacts with multiple WD40-repeat proteins and regulates histone methylation. Nat. Cell Biol. 8: 1277-1283.
4. Lee, J.H., et al. 2007. Identification and characterization of the human Set1B histone H3-Lys4 methyltransferase complex. J. Biol. Chem. 282: 13419-13428.

CHROMOSOMAL LOCATION

Genetic locus: WDR82 (human) mapping to 3p21.2.

PRODUCT

WDR82 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 WDR82 shRNA Plasmid (h): sc-78161-SH and WDR82 shRNA (h) Lentiviral Particles: sc-78161-V as alternate gene silencing products.

For independent verification of WDR82 (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-78161A, sc-78161B and sc-78161C.

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

WDR82 siRNA (h) is recommended for the inhibition of WDR82 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 contains 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

WDR82 (A-2): sc-518243 is recommended as a control antibody for monitoring of WDR82 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) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) 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 WDR82 gene expression knockdown using RT-PCR Primer: WDR82 (h)-PR: sc-78161-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RT-PCR REAGENTS

1. Austenaa, L.M.I., et al. 2021. A first exon termination checkpoint preferentially suppresses extragenic transcription. Nat. Struct. Mol. Biol. 28: 337-346.
2. Russo, M., et al. 2024. Acetyl-CoA production by mediator-bound 2-keto-acid dehydrogenases boosts de novo histone acetylation and is regulated by nitric oxide. Mol. Cell 84: 967-980.e10.

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.