

ZNF831 siRNA (h): sc-72718

BACKGROUND

ZNF831 (zinc finger protein 831, C20orf174) is a divalent Zinc ion (Zn^{2+}) binding, DNA binding transcription factor. Heterogeneous triple-negative breast cancer (TNBC) exhibits a signature phenotype (Immunity_H) co-expression subnetwork of five genes (CORO1A, STAT4, BCL11B, ZNF831, and EOMES), that influence apoptosis, calcium signaling, and MAPK, PI3K-Akt and RAS signaling. Pregnancy-dependent preeclampsia patient genome-wide association studies indicate risk-dependent sequence variants within the maternal genome at ZNF831 (20q13.32) and FTO (16q12.2) loci. ZNF831 locus single-nucleotide polymorphism measurements indicate a CpG methylation quantitative trait loci (QTL) (epigenomic context of SNP variants) signature for pancreatic β -cell metabolic rates of insulin and C-peptide translation. Expression of a four-gene signature: NAPS3, ZNF831, CXCL9 and PYHIN1 correlates with immunosuppression activity (PD-L1 and PD1), and is predictive of survival in patients with pancreatic ductal adenocarcinoma (PDAC) solid malignancies. SCML4-, ZNF831-, SP140- and IKZF3-containing transcriptome level immune response modulator networks in breast cancer stem cell (bcSC) metastasis patients correlate to recurrence-free survival and pathological response to chemotherapy.

REFERENCES

1. da Silveira, W.A., et al. 2017. Transcription factor networks derived from breast cancer stem cells control the immune response in the basal subtype. *Sci. Rep.* 7: 2851.
2. He, Y., et al. 2018. Classification of triple-negative breast cancers based on immunogenomic profiling. *J. Exp. Clin. Cancer Res.* 37: 327.
3. Bandesh, K., et al. 2019. Genomewide association study of C-peptide surfaces key regulatory genes in Indians. *J. Genet.* 98: 8.
4. Steinhorsdottir, V., et al. 2020. Genetic predisposition to hypertension is associated with preeclampsia in European and Central Asian women. *Nat. Commun.* 11: 5976.
5. Tan, Z., et al. 2021. Analysis of immune-related signatures related to CD4+ T cell infiltration with gene co-expression network in pancreatic adenocarcinoma. *Front. Oncol.* 11: 674897.

CHROMOSOMAL LOCATION

Genetic locus: ZNF831 (human) mapping to 20q13.32.

PRODUCT

ZNF831 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZNF831 shRNA Plasmid (h): sc-72718-SH and ZNF831 shRNA (h) Lentiviral Particles: sc-72718-V as alternate gene silencing products.

For independent verification of ZNF831 (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-72718A, sc-72718B and sc-72718C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ZNF831 siRNA (h) is recommended for the inhibition of ZNF831 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 μ M in 66 μ l. 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 ZNF831 gene expression knockdown using RT-PCR Primer: ZNF831 (h)-PR: sc-72718-PR (20 μ l). Annealing temperature for the primers should be $55-60^{\circ}$ C and the extension temperature should be $68-72^{\circ}$ 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.