SANTA CRUZ BIOTECHNOLOGY, INC.

TMEM173 siRNA (h): sc-92042

BACKGROUND

TMEM173 (transmembrane protein 173) is a 379 amino acid protein encoded by a gene mapping to human chromosome 5. With 181 million base pairs encoding around 1,000 genes, chromosome 5 is about 6% of human genomic DNA. It is associated with Cockayne syndrome through the ERCC8 gene and familial adenomatous polyposis through the adenomatous polyposis coli (APC) tumor suppressor gene. Treacher Collins syndrome is also chromosome 5 associated and is caused by insertions or deletions within the TCOF1 gene. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome. Deletion of 5q or chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

CHROMOSOMAL LOCATION

Genetic locus: TMEM173 (human) mapping to 5q31.2.

PRODUCT

TMEM173 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 TMEM173 shRNA Plasmid (h): sc-92042-SH and TMEM173 shRNA (h) Lentiviral Particles: sc-92042-V as alternate gene silencing products.

For independent verification of TMEM173 (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-92042A, sc-92042B and sc-92042C.

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

TMEM173 siRNA (h) is recommended for the inhibition of TMEM173 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

TMEM173 (C-10): sc-518172 is recommended as a control antibody for monitoring of TMEM173 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 TMEM173 gene expression knockdown using RT-PCR Primer: TMEM173 (h)-PR: sc-92042-PR (20 µl, 599 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chamilos, G., et al. 2012. Cytosolic sensing of extracellular self-DNA transported into monocytes by the antimicrobial peptide LL37. Blood 120: 3699-3707.
2. Olagnier, D., et al. 2014. Inhibition of dengue and chikungunya virus infections by RIG-I-mediated type I interferon-independent stimulation of the innate antiviral response. J. Virol. 88: 4180-4194.
3. Liu, Y., et al. 2016. RIG-I mediated STING up-regulation restricts HSV-1 infection. J. Virol. 90: 9406-9419.
4. Olagnier, D., et al. 2018. Nrf2 negatively regulates STING indicating a link between antiviral sensing and metabolic reprogramming. Nat. Commun. 9: 3506.
5. Davis, S.E., et al. 2019. Nucleosomal dsDNA stimulates APOL1 expression in human cultured podocytes by activating the cGAS/IFI16-STING signaling pathway. Sci. Rep. 9: 15485.
6. Uhlorn, B.L., et al. 2020. Attenuation of cGAS/STING activity during mitosis. Life Sci. Alliance 3: e201900636.
7. Ha, M.H., et al. 2023. PTEN-induced kinase 1 is associated with renal aging, via the cGAS-STING pathway. Aging Cell 22: e13865.
8. Yang, X., et al. 2023. STING deletion alleviates podocyte injury through suppressing inflammation by targeting NLRP3 in diabetic kidney disease. Cell. Signal. 109: 110777.
9. Chen, J., et al. 2025. Mitochondrial damage causes inflammation via cGAS-STING signaling in ketamine-induced cystitis. Inflamm. Res. 74: 6.

RESEARCH USE

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