SANTA CRUZ BIOTECHNOLOGY, INC.

CD98 siRNA (m): sc-35034

BACKGROUND

CD98 (4F2, CD98, MDU1, 4F2HC, 4T2HC, NACAE) is a disulfide-linked heterodimer composed of a glycosylated heavy chain and a non-glycosylated light chain. CD98 is a scaffolding protein that interacts with basolaterally expressed amino acid transporters and β1 integrins and can alter amino acid transport and cell adhesion, migration and branching morphogenesis. The heavy chain is a type II integral membrane protein. CD98 is expressed on T cells and is upregulated upon T cell activation. CD98 is also present on monocytes and at lower levels on granulocytes, platelets and lymphocytes. Evidence suggests that CD98 may play a role in the regulation of T cell activation and proliferation. Alternate transcriptional splice variants, encoding different isoforms exist for the human CD98 gene.

CHROMOSOMAL LOCATION

Genetic locus: Slc3a2 (mouse) mapping to 19 A.

PRODUCT

CD98 siRNA (m) 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 CD98 shRNA Plasmid (m): sc-35034-SH and CD98 shRNA (m) Lentiviral Particles: sc-35034-V as alternate gene silencing products.

For independent verification of CD98 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35034A, sc-35034B and sc-35034C.

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

CD98 siRNA (m) is recommended for the inhibition of CD98 expression in mouse 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

CD98 (F-2): sc-390154 is recommended as a control antibody for monitoring of CD98 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 CD98 gene expression knockdown using RT-PCR Primer: CD98 (m)-PR: sc-35034-PR (20 µl, 592 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Xue, F.M., et al. 2012. CD98 positive eosinophils contribute to T helper 1 pattern inflammation. PLoS ONE 7: e51830.
2. Poettler, M., et al. 2013. CD98hc (SLC3A2) drives integrin-dependent renal cancer cell behavior. Mol. Cancer 12: 169.
3. Xiao, B., et al. 2014. Glycoprotein CD98 as a receptor for colitis-targeted delivery of nanoparticle. J. Mater. Chem. B 2: 1499-1508.
4. Xiao, B., et al. 2014. Nanoparticles with surface antibody against CD98 and carrying CD98 small interfering RNA reduce colitis in mice. Gastroenterology 146: 1289-1300.
5. Laroui, H., et al. 2014. Targeting intestinal inflammation with CD98 siRNA/PEI-loaded nanoparticles. Mol. Ther. 22: 69-80.
6. Xiao, B., et al. 2016. Urocanic acid-modified chitosan nanoparticles can confer anti-inflammatory effect by delivering CD98 siRNA to macrophages. Colloids Surf. B Biointerfaces 143: 186-193.
7. Xiao, B., et al. 2016. Combination therapy for ulcerative colitis: orally targeted nanoparticles prevent mucosal damage and relieve inflammation. Theranostics 6: 2250-2266.
8. Zhang, M., et al. 2017. Oral administration of ginger-derived nanolipids loaded with siRNA as a novel approach for efficient siRNA drug delivery to treat ulcerative colitis. Nanomedicine 12: 1927-1943.
9. Beaudreuil, S., et al. 2019. Circulating CASK is associated with recurrent focal segmental glomerulosclerosis after transplantation. PLoS ONE 14: e0219353.

RESEARCH USE

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