SANTA CRUZ BIOTECHNOLOGY, INC.

CALCOCO2 siRNA (h): sc-93738

BACKGROUND

CALCOCO2 (calcium-binding and coiled-coil domain-containing protein 2), also known as NDP52 (nuclear dot protein 52), is a 446 amino acid protein that localizes to the perinuclear region of the cytoplasm and to nuclear dots, where it functions as a subunit of nuclear domain 10 (ND10) bodies. ND10 bodies are nuclear domains that are thought to be associated with the nuclear matrix and may have a role in the life cycles of various viruses, such as HSV-1. Expressed ubiquitously with highest expression in skeletal muscle, CALCOCO2 exists as a complex with proteins such as Myosin VI and is involved in Actin cytoskeleton organization and in ruffle formation. CALCOCO2 may also regulate cell adhesion, cytokine signaling and constitutive secretion within the cell, suggesting an important role in membrane trafficking pathways and developmental events.

CHROMOSOMAL LOCATION

Genetic locus: CALCOCO2 (human) mapping to 17q21.32.

PRODUCT

CALCOCO2 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 CALCOCO2 shRNA Plasmid (h): sc-93738-SH and CALCOCO2 shRNA (h) Lentiviral Particles: sc-93738-V as alternate gene silencing products.

For independent verification of CALCOCO2 (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-93738A, sc-93738B and sc-93738C.

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

CALCOCO2 siRNA (h) is recommended for the inhibition of CALCOCO2 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

CALCOCO2 (F-6): sc-376540 is recommended as a control antibody for monitoring of CALCOCO2 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 CALCOCO2 gene expression knockdown using RT-PCR Primer: CALCOCO2 (h)-PR: sc-93738-PR (20 µl, 586 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Mohamud, Y., et al. 2019. CALCOCO2/NDP52 and SQSTM1/p62 differentially regulate coxsackievirus B3 propagation. Cell Death Differ. 26: 1062-1076.
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3. Mohamud, Y., et al. 2021. Autophagy receptor protein Tax1-binding protein 1/TRAF6-binding protein is a cellular substrate of enteroviral proteinase. Front. Microbiol. 12: 647410.
4. Di Rita, A., et al. 2021. Characterization of a natural variant of human NDP52 and its functional consequences on mitophagy. Cell Death Differ. 28: 2499-2516.
5. Yang, Z., et al. 2021. METTL14 facilitates global genome repair and suppresses skin tumorigenesis. Proc. Natl. Acad. Sci. USA 118: e2025948118.
6. Jiao, Y., et al. 2021. PABPC4 broadly inhibits coronavirus replication by degrading nucleocapsid protein through selective autophagy. Microbiol. Spectr. 9: e0090821.
7. Qin, W., et al. 2022. Nuclear ribonucleoprotein RALY targets virus nucleocapsid protein and induces autophagy to restrict porcine epidemic diarrhea virus replication. J. Biol. Chem. 298: 102190.
8. Qin, W., et al. 2022. hnRNP K degrades viral nucleocapsid protein and induces type I IFN production to inhibit porcine epidemic diarrhea virus replication. J. Virol. 96: e0155522.
9. Qin, W., et al. 2023. PTBP1 suppresses porcine epidemic diarrhea virus replication via inducing protein degradation and IFN production. J. Biol. Chem. 299: 104987.

RESEARCH USE

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