SANTA CRUZ BIOTECHNOLOGY, INC.

CHMP4C siRNA (h): sc-72899

BACKGROUND

CHMP4C (chromatin modifying protein 4C), also known as Shax3 or SNF7-3, is a 233 amino acid protein that localizes to the cytoplasm and belongs to the chromatin-modifying protein/charged multivesicular body protein (CHMP). Members of the CHMP family, including CHMP4C, function as components of the ESCRT-III (endosomal sorting complex required for transport III) complex, which is involved in the formation of endocytic multivesicular bodies (MVBs) and in the degradation of surface receptor proteins. Expressed in kidney, heart and spleen, CHMP4C, as part of the ESCRT-III complex, plays a role in the delivery of transmembrane proteins into the lumen of the lysosome for degradation and may also be involved in HIV-1 infection, as the ESCRT-III complex serves as a budding site for viral proteins.

REFERENCES

1. Strack, B., et al. 2003. AIP1/ALIX is a binding partner for HIV-1 p6 and EIAV p9 functioning in virus budding. Cell 114: 689-699.
2. von Schwedler, U.K., et al. 2003. The protein network of HIV budding. Cell 114: 701-713.
3. Katoh, K., et al. 2003. The ALG-2-interacting protein Alix associates with CHMP4B, a human homologue of yeast Snf7 that is involved in multivesicular body sorting. J. Biol. Chem. 278: 39104-39113.
4. Katoh, K., et al. 2004. CHMP4B is a major binding partner of the ALG-2-interacting protein Alix among the three CHMP4 isoforms. Arch. Biochem. Biophys. 421: 159-165.
5. Peck, J.W., et al. 2004. Structure and function of human Vps20 and Snf7 proteins. Biochem. J. 377: 693-700.
6. Tsang, H.T., et al. 2006. A systematic analysis of human CHMP protein interactions: additional MIT domain-containing proteins bind to multiple components of the human ESCRT III complex. Genomics 88: 333-346.
7. Row, P.E., et al. 2007. The MIT domain of UBPY constitutes a CHMP binding and endosomal localization signal required for efficient epidermal growth factor receptor degradation. J. Biol. Chem. 282: 30929-30937.

CHROMOSOMAL LOCATION

Genetic locus: CHMP4C (human) mapping to 8q21.13.

PRODUCT

CHMP4C 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 CHMP4C shRNA Plasmid (h): sc-72899-SH and CHMP4C shRNA (h) Lentiviral Particles: sc-72899-V as alternate gene silencing products.

For independent verification of CHMP4C (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-72899A, sc-72899B and sc-72899C.

RESEARCH USE

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

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

CHMP4C siRNA (h) is recommended for the inhibition of CHMP4C 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CHMP4C gene expression knockdown using RT-PCR Primer: CHMP4C (h)-PR: sc-72899-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Petsalaki, E. and Zachos, G. 2016. Clks 1, 2 and 4 prevent chromatin breakage by regulating the Aurora B-dependent abscission checkpoint. Nat. Commun. 7: 11451.
2. Petsalaki, E., et al. 2018. The ESCRT protein CHMP4C regulates mitotic spindle checkpoint signaling. J. Cell Biol. 217: 861-876.
3. Petsalaki, E., et al. 2018. CHMP4C is required for stable kinetochore-microtubule attachments. Chromosoma 127: 461-473.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.