SANTA CRUZ BIOTECHNOLOGY, INC.

CRM1 siRNA (h): sc-35116

BACKGROUND

Protein transport across the nucleus is a selective, multistep process involving several cytoplasmic factors. Proteins must be recognized as import substrates, dock at the nuclear pore complex and translocate across the nuclear envelope in an ATP-dependent fashion. Two cytosolic factors centrally involved in the recognition and docking process are the karyopherin α1 and karyopherin β1 subunits. p62 glycoprotein is a nucleoporin that is not only involved in the nuclear import of proteins, but also the export of nascent mRNA strands. NTF2 (nuclear transport factor 2) interacts with nucleoporin p62 as a homodimer composed of two monomers, and may be an obligate component of functional p62. CRM1 has been shown to be an export receptor for leucine-rich proteins that contain the nuclear export signal (NES).

CHROMOSOMAL LOCATION

Genetic locus: XPO1 (human) mapping to 2p15.

PRODUCT

CRM1 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 CRM1 shRNA Plasmid (h): sc-35116-SH and CRM1 shRNA (h) Lentiviral Particles: sc-35116-V as alternate gene silencing products.

For independent verification of CRM1 (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-35116A, sc-35116B and sc-35116C.

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

CRM1 siRNA (h) is recommended for the inhibition of CRM1 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.

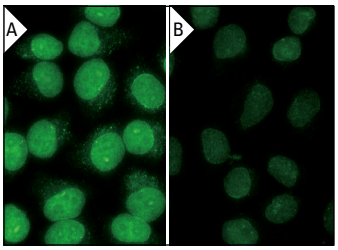
GENE EXPRESSION MONITORING

CRM1 (C-1): sc-74454 is recommended as a control antibody for monitoring of CRM1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CRM1 gene expression knockdown using RT-PCR Primer: CRM1 (h)-PR: sc-35116-PR (20 µl, 554 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



CRM1 siRNA (h): sc-35116. Immunofluorescence staining of methanol-fixed, control HeLa (**A**) and CRM1 siRNA silenced HeLa (**B**) cells showing diminished nuclear staining in the siRNA silenced cells. Cells probed with CRM1 (H-300): sc-5595.

SELECT PRODUCT CITATIONS

1. van der Watt, P.J., et al. 2009. The karyopherin proteins, CRM1 and karyopherin β1, are overexpressed in cervical cancer and are critical for cancer cell survival and proliferation. Int. J. Cancer 124: 1829-1840.
2. Funasaka, T., et al. 2012. Regulation of autophagy by nucleoporin Tpr. Sci. Rep. 2: 878.
3. van der Watt, P.J., et al. 2014. Elevated expression of the nuclear export protein, CRM1 (exportin 1), associates with human oesophageal squamous cell carcinoma. Oncol. Rep. 32: 730-738.
4. Gao, W., et al. 2015. Overexpression of CRM1: a characteristic feature in a transformed phenotype of lung carcinogenesis and a molecular target for lung cancer adjuvant therapy. J. Thorac. Oncol. 10: 815-825.
5. Noh, J.H., et al. 2016. HuR and GRSF1 modulate the nuclear export and mitochondrial localization of the lncRNA RMRP. Genes Dev. 30: 1224-1239.
6. Gilistro, E., et al. 2017. Importin-β and CRM1 control a RANBP2 spatiotemporal switch essential for mitotic kinetochore function. J. Cell Sci. 130: 2564-2578.
7. Mazaira, G.I., et al. 2020. Nucleocytoplasmic shuttling of the glucocorticoid receptor is influenced by tetratricopeptide repeat-containing proteins. J. Cell Sci. 133: jcs238873.

RESEARCH USE

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