SANTA CRUZ BIOTECHNOLOGY, INC.

CEP170 siRNA (m): sc-142280

BACKGROUND

Centrosomes are the major microtubule-organizing centers of mammalian cells. They are composed of a centriole pair and surrounding microtubule-nucleating material termed pericentriolar material (PCM). Bipolar mitotic spindle assembly relies on two intertwined processes: centriole duplication and centrosome maturation. Failure to properly orchestrate centrosome duplication and maturation is subsequently linked to spindle defects, which can result in aneuploidy and promote cancer progression. CEP170 (Centrosomal protein of 170 kDa) is a 1,584 amino acid protein that is associated with centrosomes during interphase and with spindle microtubules during mitosis. CEP170 is a marker for mature centrioles and can be used to discriminate true centriole overduplication from centriole amplification that results from aborted cell division. This analysis has been used to suggest that psuedobipolar mitoses may play a role in the propagation of chromosomal instability in high-risk HPV-associated tumors. There are three isoforms of CEP170 that are produced as a result of alternative splicing events.

REFERENCES

1. Duensing, S., et al. 2003. Centrosome abnormalities and genomic instability induced by human papillomavirus oncoproteins. Prog. Cell Cycle Res. 5: 383-391.
2. Lingle, W.L., et al. 2005. Deregulation of the centrosome cycle and the origin of chromosomal instability in cancer. Adv. Exp. Med. Biol. 570: 393-421.
3. Guarguaglini, G., et al. 2005. The forkhead-associated domain protein Cep170 interacts with Polo-like kinase 1 and serves as a marker for mature centrioles. Mol. Biol. Cell 16: 1095-1107.
4. van Vugt, M.A., et al. 2005. Getting in and out of mitosis with Polo-like kinase-1. Oncogene 24: 2844-2859.
5. Duensing, A., et al. 2006. p21(Waf1/Cip1) deficiency stimulates centriole overduplication. Cell Cycle 5: 2899-2902.

CHROMOSOMAL LOCATION

Genetic locus: Cep170 (mouse) mapping to 1 H4.

PRODUCT

CEP170 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 CEP170 shRNA Plasmid (m): sc-142280-SH and CEP170 shRNA (m) Lentiviral Particles: sc-142280-V as alternate gene silencing products.

For independent verification of CEP170 (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-142280A, sc-142280B and sc-142280C.

PROTOCOLS

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

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

CEP170 siRNA (m) is recommended for the inhibition of CEP170 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CEP170 gene expression knockdown using RT-PCR Primer: CEP170 (m)-PR: sc-142280-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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