SANTA CRUZ BIOTECHNOLOGY, INC.

# CP110 siRNA (h): sc-93533

## BACKGROUND

Centrosome duplication and separation are linked inextricably to certain cell cycle events, specifically, activation of cyclin-dependent kinases of cyclin-dependent kinases. CP110 (centrosomal protein of 110 kDa) is a 991 amino acid cell cycle-dependent CDK substrate that regulates centrosome duplication. Localizing to the centrosome, CP110 contains ten putative CDK2 phosphorylation sites, two cyclin-binding domains and two degradation motifs. CP110 is highly expressed in testis with much lower expression in all other tissues. CP110 interacts with $Ca^{2+}$-binding proteins including calmodulin (CaM) and centrin, to regulate genome stability and progression through cytokinesis. During the formation of cylindrical centrioles, it is suggested that CP110 acts as a distal end-capping protein thereby limiting the elongation of newly formed centrioles. Existing as two alternatively spliced isoforms, CP110 is observed at highest levels during the S phase of the cell cycle. CP110 becomes phosphorylated by Cdks (cyclin-dependent kinases) and is encoded by a gene located on human chromosome 16p12.3.

## REFERENCES


1. Ishikawa, K., et al. 1997. Prediction of the coding sequences of unidentified human genes. VIII. 78 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 4: 307-313.
2. Chen, Z., et al. 2002. CP110, a cell cycle-dependent CDK substrate, regulates centrosome duplication in human cells. Dev. Cell 3: 339-350.
3. Tsang, W.Y., et al. 2006. CP110 cooperates with two calcium-binding proteins to regulate cytokinesis and genome stability. Mol. Biol. Cell 17: 3423-3434.
4. Spektor, A., et al. 2007. Cep97 and CP110 suppress a cilia assembly program. Cell 130: 678-690.
5. Kleylein-Sohn, J., et al. 2007. Plk4-induced centriole biogenesis in human cells. Dev. Cell 13: 190-202.
6. Tsang, W.Y., et al. 2008. CP110 suppresses primary cilia formation through its interaction with CEP290, a protein deficient in human ciliary disease. Dev. Cell 15: 187-197.


## CHROMOSOMAL LOCATION

Genetic locus: CCP110 (human) mapping to 16p12.3.

## PRODUCT

CP110 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 CP110 shRNA Plasmid (h): sc-93533-SH and CP110 shRNA (h) Lentiviral Particles: sc-93533-V as alternate gene silencing products.

For independent verification of CP110 (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-93533A, sc-93533B and sc-93533C.

## 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

CP110 siRNA (h) is recommended for the inhibition of CP110 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 CP110 gene expression knockdown using RT-PCR Primer: CP110 (h)-PR: sc-93533-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.

## PROTOCOLS

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