



# Plectin siRNA (h): sc-29453

## BACKGROUND

Plectin is an abundant cytoskeletal protein that is involved in cytoplasm stabilization. Plectin has been shown to crosslink intermediate filaments to microtubules and microfilaments, and to anchor intermediate filaments to the plasma and nuclear membranes. Plectin binds both Lamin B and vimentin, and this binding is regulated by a variety of protein kinases. Phosphorylation by PKA or PKC results in decreased binding to Lamin B, and phosphorylation by PKA enhances the Plectin-vimentin interactions. Plectin is also a substrate for p34<sup>cdc2</sup> kinase. Several alternative splice isoforms of Plectin are known to exist. Mutations in human Plectin are known to cause epidermolysis bullosa simplex with muscular dystrophy (EBS-MD).

## REFERENCES

1. Foisner, R., et al. 1991. Protein kinase A- and protein kinase C-regulated interaction of Plectin with Lamin B and Vimentin. *Proc. Natl. Acad. Sci. USA* 88: 3812-3816.
2. Liu, C.G., et al. 1996. Human Plectin: organization of the gene, sequence analysis and chromosome localization (8q24). *Proc. Natl. Acad. Sci. USA* 93: 4278-4283.
3. Malecz, N., et al. 1996. Identification of Plectin as a substrate of p34<sup>cdc2</sup> kinase and mapping of a single phosphorylation site. *J. Biol. Chem.* 271: 8203-8208.

## CHROMOSOMAL LOCATION

Genetic locus: PLEC (human) mapping to 8q24.3.

## PRODUCT

Plectin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Plectin shRNA Plasmid (h): sc-29453-SH and Plectin shRNA (h) Lentiviral Particles: sc-29453-V as alternate gene silencing products.

For independent verification of Plectin (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-29453A, sc-29453B and sc-29453C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Plectin siRNA (h) is recommended for the inhibition of Plectin 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  $\mu$ M in 66  $\mu$ l. 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

Plectin (10F6): sc-33649 is recommended as a control antibody for monitoring of Plectin 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 Plectin gene expression knockdown using RT-PCR Primer: Plectin (h)-PR: sc-29453-PR (20  $\mu$ l, 416 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Jeong, J.B., et al. 2013. A mechanistic study of the proapoptotic effect of tolafenamic acid: involvement of NF $\kappa$ B activation. *Carcinogenesis* 34: 2350-2360.
2. Burch, T.C., et al. 2013. Variable metastatic potentials correlate with differential Plectin and Vimentin expression in syngeneic androgen independent prostate cancer cells. *PLoS ONE* 8: e65005.
3. Arihara, Y., et al. 2017. Small molecule CP-31398 induces reactive oxygen species-dependent apoptosis in human multiple myeloma. *Oncotarget* 8: 65889-65899.
4. Son, S., et al. 2022. Autophagosome-lysosome fusion is facilitated by Plectin-stabilized actin and keratin 8 during macroautophagic process. *Cell. Mol. Life Sci.* 79: 95.
5. Amiri, A., et al. 2023. The cyto-linker and scaffolding protein "Plectin" mis-localization leads to softening of cancer cells. *Nanoscale* 15: 15008-15026.

## RESEARCH USE

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