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# Vangl2 siRNA (h): sc-45595

## BACKGROUND

The Vang family of proteins are integral membrane proteins that are homologs of the *Drosophila* tissue polarity gene strabismus. The gene encoding for Van Gogh-like protein 1 (Vangl1), also designated Strabismus 2 (STB2), localizes to chromosome 1p13.1. Van Gogh-like protein 2 (Vangl2), also designated Strabismus1 (STB1), localizes on chromosome 1q23.2. Vangl1 is expressed in testis and ovary, but also in gastric and pancreatic cancer. Vangl proteins play a key developmental role in establishing planar cell polarity (PCP) and in regulating convergent extension (CE) movements during embryogenesis. Vangl1 and Vangl2 are both down-regulated in several cancer cell lines and primary tumors.

## REFERENCES

- Jessen, J.R., et al. 2004. Identification and developmental expression pattern of Van Gogh-like 1, a second zebrafish strabismus homologue. *Gene Expr. Patterns* 4: 339-344.
- Lu, X., et al. 2004. PTK7/CCK-4 is a novel regulator of planar cell polarity in vertebrates. *Nature* 430: 93-98.
- Torban, E., et al. 2004. Independent mutations in mouse Vangl2 that cause neural tube defects in looptail mice impair interaction with members of the Dishevelled family. *J. Biol. Chem.* 279: 52703-52713.
- Torban, E., et al. 2004. Van Gogh-like2 (Strabismus) and its role in planar cell polarity and convergent extension in vertebrates. *Trends Genet.* 20: 570-577.
- Katoh, M., et al. 2005. Identification and characterization of rat Ankrd6 gene in silico. *Int. J. Mol. Med.* 15: 359-363.

## CHROMOSOMAL LOCATION

Genetic locus: VANGL2 (human) mapping to 1q23.2.

## PRODUCT

Vangl2 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 Vangl2 shRNA Plasmid (h): sc-45595-SH and Vangl2 shRNA (h) Lentiviral Particles: sc-45595-V as alternate gene silencing products.

For independent verification of Vangl2 (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-45595A, sc-45595B and sc-45595C.

## 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

Vangl2 siRNA (h) is recommended for the inhibition of Vangl2 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

Vangl2 (C-2): sc-515187 is recommended as a control antibody for monitoring of Vangl2 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Vangl2 gene expression knockdown using RT-PCR Primer: Vangl2 (h)-PR: sc-45595-PR (20  $\mu$ l, 475 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Escobedo, N., et al. 2013. Syndecan 4 interacts genetically with Vangl2 to regulate neural tube closure and planar cell polarity. *Development* 140: 3008-3017.
- Babayeva, S., et al. 2013. Planar cell polarity pathway regulates nephrin endocytosis in developing podocytes. *J. Biol. Chem.* 288: 24035-24048.
- Kaučák, M., et al. 2015. Asymmetry of Vangl2 in migrating lymphocytes as a tool to monitor activity of the mammalian WNT/planar cell polarity pathway. *Cell Commun. Signal.* 13: 2.

## RESEARCH USE

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