

# GPR26 siRNA (m): sc-145731

## BACKGROUND

G protein-coupled receptors (GPRs) are a protein family of transmembrane receptors that transmit an extracellular signal (ligand binding) into an intracellular signal (G protein activation). GPR signaling is an ancient evolutionarily mechanism used by all eukaryotes to sense environmental stimuli and mediate cell-cell communication. GPRs have seven membrane-spanning domains and the extracellular domains are often glycosylated. These extracellular loops also contain two highly conserved cysteine residues which create disulfide bonds to stabilize the receptor structure. GPR26 (G protein-coupled receptor 26) is a 337 amino acid protein that is primarily expressed in regions of the brain. GPR26 is characterized as an "orphan" G protein-coupled receptor, which is a receptor that binds an unidentified natural ligand. Due to evidence of GPR26 being downregulated in glioblastomas, it has been suggested that GPR26 may be a suppressor of early glioma development.

## REFERENCES

1. Marchese, A., Sawzdargo, M., Nguyen, T., Cheng, R., Heng, H.H., Nowak, T., Im, D.S., Lynch, K.R., George, S.R. and O'Dowd, B.F. 1999. Discovery of three novel orphan G protein-coupled receptors. *Genomics* 56: 12-21.
2. Lee, D.K., Lynch, K.R., Nguyen, T., Im, D.S., Cheng, R., Saldivia, V.R., Liu, Y., Liu, I.S., Heng, H.H., Seeman, P., George, S.R., O'Dowd, B.F. and Marchese, A. 2000. Cloning and characterization of additional members of the G protein-coupled receptor family. *Biochim. Biophys. Acta* 1490: 311-323.
3. Lee, D.K., Nguyen, T., Lynch, K.R., Cheng, R., Vanti, W.B., Arkhitko, O., Lewis, T., Evans, J.F., George, S.R. and O'Dowd, B.F. 2001. Discovery and mapping of ten novel G protein-coupled receptor genes. *Gene* 275: 83-91.
4. Bresnick, J.N., Skynner, H.A., Chapman, K.L., Jack, A.D., Zamara, E., Negulescu, P., Beaumont, K., Patel, S. and McAllister, G. 2003. Identification of signal transduction pathways used by orphan G protein-coupled receptors. *Assay Drug Dev. Technol.* 1: 239-249.
5. Vanti, W.B., Nguyen, T., Cheng, R., Lynch, K.R., George, S.R. and O'Dowd, B.F. 2003. Novel human G protein-coupled receptors. *Biochem. Biophys. Res. Commun.* 305: 67-71.
6. Kobilka, B.K. 2007. G protein-coupled receptor structure and activation. *Biochim. Biophys. Acta* 1768: 794-807.
7. Jones, P.G., Nawoschik, S.P., Sreekumar, K., Uveges, A.J., Tseng, E., Zhang, L., Johnson, J., He, L., Paulsen, J.E., Bates, B. and Pausch, M.H. 2007. Tissue distribution and functional analyses of the constitutively active orphan G protein-coupled receptors, GPR26 and GPR78. *Biochim. Biophys. Acta* 1770: 890-901.
8. Carter, A.N., Cole, C.L., Playle, A.G., Ramsay, E.J. and Shervington, A.A. 2008. GPR26: a marker for primary glioblastoma? *Mol. Cell. Probes* 22: 133-137.

## CHROMOSOMAL LOCATION

Genetic locus: Gpr26 (mouse) mapping to 7 F3.

## RESEARCH USE

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

## PRODUCT

GPR26 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR26 shRNA Plasmid (m): sc-145731-SH and GPR26 shRNA (m) Lentiviral Particles: sc-145731-V as alternate gene silencing products.

For independent verification of GPR26 (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-145731A, sc-145731B and sc-145731C.

## 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

GPR26 siRNA (m) is recommended for the inhibition of GPR26 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  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GPR26 gene expression knockdown using RT-PCR Primer: GPR26 (m)-PR: sc-145731-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.