

PI 3-kinase p101 siRNA (m): sc-152242

BACKGROUND

PI 3-kinase p101 is an 880 amino acid protein that acts as a regulatory subunit of the PI3 kinase γ complex. PI 3-kinase p101 interacts with PI 3-kinase p110 γ to form the PI3 kinase γ complex, which is activated by $G_{\beta\gamma}$ proteins and plays a role in many physiological processes, such as cardiac function, neutrophil chemotaxis and mast cell degranulation. Specifically, the PI3 kinase γ complex is involved in suppression of apoptosis, cellular transport and cell motility. Binding of the PI 3-kinase p110 γ subunit to PI 3-kinase p101 is dependent on the N-terminal region of PI 3-kinase p101. With highest expression in leukocytes, spleen lymph node thymus and bone marrow, PI 3-kinase p101 is subcellularly located in the nucleus, cytoplasm, or it can exist as a peripheral membrane protein. There are two isoforms of PI 3-kinase p101 that are produced as a result of alternative splicing.

REFERENCES

1. Franke, T.F., Kaplan, D.R. and Cantley, L.C. 1997. PI3K: downstream AKTion blocks apoptosis. *Cell* 88: 435-437.
2. Stephens, L.R., Eguinoa, A., Erdjument-Bromage, H., Lui, M., Cooke, F., Coadwell, J., Smrcka, A.S., Thelen, M., Cadwallader, K., Tempst, P. and Hawkins, P.T. 1997. The $G_{\beta\gamma}$ sensitivity of a PI3K is dependent upon a tightly associated adaptor, p101. *Cell* 89: 105-114.
3. Toker, A. and Cantley, L.C. 1997. Signalling through the lipid products of phosphoinositide-3-OH kinase. *Nature* 387: 673-676.
4. Krugmann, S., Hawkins, P.T., Pryer, N. and Braselmann, S. 1999. Characterizing the interactions between the two subunits of the p101/p110 γ phosphoinositide 3-kinase and their role in the activation of this enzyme by $G_{\beta\gamma}$ subunits. *J. Biol. Chem.* 274: 17152-17158.
5. Stephens, L., Ellson, C. and Hawkins, P. 2002. Roles of PI3Ks in leukocyte chemotaxis and phagocytosis. *Curr. Opin. Cell Biol.* 14: 203-213.
6. Brock, C., Schaefer, M., Reusch, H.P., Czupalla, C., Michalke, M., Spicher, K., Schultz, G. and Nürnberg, B. 2003. Roles of $G_{\beta\gamma}$ in membrane recruitment and activation of p110 γ /p101 phosphoinositide 3-kinase γ . *J. Cell Biol.* 160: 89-99.
7. Kerchner, K.R., Clay, R.L., McCleery, G., Watson, N., McIntire, W.E., Myung, C.S. and Garrison, J.C. 2004. Differential sensitivity of phosphatidylinositol 3-kinase p110 γ to isoforms of G protein $\beta\gamma$ dimers. *J. Biol. Chem.* 279: 44554-44562.
8. Suire, S., Coadwell, J., Ferguson, G.J., Davidson, K., Hawkins, P. and Stephens, L. 2005. p84, a new $G_{\beta\gamma}$ -activated regulatory subunit of the type IB phosphoinositide 3-kinase p110 γ . *Curr. Biol.* 15: 566-570.
9. Voigt, P., Brock, C., Nürnberg, B. and Schaefer, M. 2005. Assigning functional domains within the p101 regulatory subunit of phosphoinositide 3-kinase γ . *J. Biol. Chem.* 280: 5121-5127.

CHROMOSOMAL LOCATION

Genetic locus: Pik3r5 (mouse) mapping to 11 B3.

RESEARCH USE

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

PRODUCT

PI 3-kinase p101 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PI 3-kinase p101 shRNA Plasmid (m): sc-152242-SH and PI 3-kinase p101 shRNA (m) Lentiviral Particles: sc-152242-V as alternate gene silencing products.

For independent verification of PI 3-kinase p101 (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-152242A, sc-152242B and sc-152242C.

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

APPLICATIONS

PI 3-kinase p101 siRNA (m) is recommended for the inhibition of PI 3-kinase p101 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 μ M in 66 μ 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 PI 3-kinase p101 gene expression knockdown using RT-PCR Primer: PI 3-kinase p101 (m)-PR: sc-152242-PR (20 μ 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 for detailed protocols and support products.