SANTA CRUZ BIOTECHNOLOGY, INC.

Rictor siRNA (r): sc-270141

BACKGROUND

FRAP is a large protein kinase that is the mammalian target of rapamycin, an immunosuppressant that blocks vessel restenosis and also has potential anticancer applications. Rapamycin-insensitive companion of FRAP, also designated Rictor, shares homology with pianissimo from *D. discoideum,* STE20p from *S. pombe,* and AVO3p from *S. cerevisiae.* Rictor forms a complex with FRAP, which is important in cell growth regulation as it integrates growth factor and nutrient derived signals. The Rictor-FRAP complex plays a role in PKCα phosphorylation, directly phosphorylates Akt/PKB on Ser473 *in vitro* and facilitates Thr308 phosphorylation by PDK1. It also may function as a drug target in tumors that have lost expression of PTEN, a tumor suppressor that opposes activation of Akt/PKB.

CHROMOSOMAL LOCATION

Genetic locus: Rictor (rat) mapping to 2q16.

PRODUCT

Rictor siRNA (r) 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 Rictor shRNA Plasmid (r): sc-270141-SH and Rictor shRNA (r) Lentiviral Particles: sc-270141-V as alternate gene silencing products.

For independent verification of Rictor (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270141A, sc-270141B and sc-270141C.

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

Rictor siRNA (r) is recommended for the inhibition of Rictor expression in rat 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.

GENE EXPRESSION MONITORING

Rictor (H-11): sc-271081 is recommended as a control antibody for monitoring of Rictor 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Rictor gene expression knockdown using RT-PCR Primer: Rictor (r)-PR: sc-270141-PR (20 µl, 567 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Gurusamy, N., et al. 2010. Cardioprotection by resveratrol: a novel mechanism via autophagy involving the mTORC2 pathway. Cardiovasc. Res. 86: 103-112.
2. Gao, Y., et al. 2015. Differential IKK/NFκB activity is mediated by TSC2 through mTORC1 in PTEN-null prostate cancer and tuberous sclerosis complex tumor cells. Mol. Cancer Res. 13: 1602-1614.
3. Park, S.H., et al. 2015. Protection of pancreatic β-cells against glucotoxicity by short-term treatment with GLP-1. Biochem. Biophys. Res. Commun. 459: 561-567.
4. Zhu, L., et al. 2018. Hyperglycemia-induced Bcl-2/Bax-mediated apoptosis of Schwann cells via mTORC1/S6K1 inhibition in diabetic peripheral neuropathy. Exp. Cell Res. 367: 186-195.
5. Xue, M., et al. 2019. Metallothionein protects the heart against myocardial infarction via the mTORC2/FoxO3a/Bim pathway. Antioxid. Redox Signal. 31: 403-419.
6. Kim, S.G., et al. 2021. Fisetin-induced PTEN expression reverses cellular senescence by inhibiting the mTORC2-Akt Ser473 phosphorylation pathway in vascular smooth muscle cells. Exp. Gerontol. 156: 111598.

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.