

Ran BP-2 siRNA (m): sc-36381

BACKGROUND

The small Ras-related protein Ran, also known as TC4, is a nuclear-localized GTPase implicated in a diverse array of cellular processes including DNA replication, entry into and exit from mitosis, and the transport of RNA and proteins through the nuclear pore complex. Ran-binding protein 2 (Ran BP-2 or Nup358) is a large scaffold cyclophilin-related protein expressed in photoreceptor cells that contains four RanBD1 domains. Localization at cytoplasmic fibrils emanates Ran BP-2 from the nuclear pore complex, which then interacts with Ran-GTPase to support its role in nucleocytoplasmic transport processes. In humans, the Ran BP-2 gene lies in a hot spot for recombination on chromosome 2q12.3. The genetic heterogeneity renders further significance of this genomic region in human disease due to its possible involvement in genetically linked disorders such as juvenile nephronophthisis, congenital hepatic fibrosis and chorioretinal dysplasia. Duplication events that occurred at the 3 Mb distal to Ran BP-2 gave rise to eight new genes encoding RGPD (RanBP2-like), GRIP domain-containing proteins, which are highly homologous to Ran BP-2.

REFERENCES

1. Delphin, C., et al. 1997. RanGTP targets p97 to Ran BP-2, a filamentous protein localized at the cytoplasmic periphery of the nuclear pore complex. *Mol. Biol. Cell* 8: 2379-2390.
2. Mahajan, R., et al. 1997. A small ubiquitin-related polypeptide involved in targeting RanGAP1 to nuclear pore complex protein Ran BP-2. *Cell* 88: 97-107.

CHROMOSOMAL LOCATION

Genetic locus: Ranbp2 (mouse) mapping to 10 B4.

PRODUCT

Ran BP-2 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 Ran BP-2 shRNA Plasmid (m): sc-36381-SH and Ran BP-2 shRNA (m) Lentiviral Particles: sc-36381-V as alternate gene silencing products.

For independent verification of Ran BP-2 (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-36381A, sc-36381B and sc-36381C.

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

Ran BP-2 siRNA (m) is recommended for the inhibition of Ran BP-2 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.

GENE EXPRESSION MONITORING

Ran BP-2 (D-4): sc-74518 is recommended as a control antibody for monitoring of Ran BP-2 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 Ran BP-2 gene expression knockdown using RT-PCR Primer: Ran BP-2 (m)-PR: sc-36381-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sharma, M., et al. 2012. Specific armadillo repeat sequences facilitate β -catenin nuclear transport in live cells via direct binding to nucleoporins Nup62, Nup153, and RanBP2/Nup358. *J. Biol. Chem.* 287: 819-831.
2. Shen, Y., et al. 2022. Ursodeoxycholic acid reduces antitumor immunosuppression by inducing CHIP-mediated TGF- β degradation. *Nat. Commun.* 13: 3419.

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.