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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

MAGI-2 siRNA (h): sc-42002

BACKGROUND

The membrane-associated guanylate kinase (MAGUK) proteins are concentrated at the membrane-cytoskeletal interface where they facilitate the assembly of multiprotein complexes on the inner surface of the plasma membrane. Three protein-protein interaction modules characteristically define MAGUK related proteins: the PDZ domain, the SH3 domain and the guanylate kinase (GuK) domain. The closely related MAGUK proteins, MAGI-1, MAGI-2 and MAGI-3 (membrane associated guanylate kinase inverted-1 and 2), likewise contain the GuK domain and five PDZ domains; however, the SH3 domain is replaced with a WW domain. The transcripts of MAGI-1 are alternatively spliced to produce three distinct proteins having unique carboxy-terminals. Two variants, MAGI-1a and MAGI-1b, are associated with the membrane and cytosolic fractions and are primarily expressed in the brain. The third isoform, MAGI-1c, encodes for a nuclear localization signal that localizes MAGI-1c to the nucleus, and it is primarily expressed in the liver and kidney. MAGI-2 and MAGI-3 are localized to the plasma membrane, and they contribute to protein scaffolding by associating with the protein phosphatase PTEN.

REFERENCES

1. Anderson, J.M. 1996. Cell signalling: MAGUK magic. *Curr. Biol.* 6: 382-384.
2. Dobrosotskaya, I., et al. 1997. MAGI-1, a membrane-associated guanylate kinase with a unique arrangement of protein-protein interaction domains. *J. Biol. Chem.* 272: 31589-31597.
3. Wood, J.D., et al. 1998. Atrophin-1, the DRPLA gene product, interacts with two families of WW domain-containing proteins. *Mol. Cell. Neurosci.* 11: 149-160.

CHROMOSOMAL LOCATION

Genetic locus: MAGI2 (human) mapping to 7q21.11.

PRODUCT

MAGI-2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MAGI-2 shRNA Plasmid (h): sc-42002-SH and MAGI-2 shRNA (h) Lentiviral Particles: sc-42002-V as alternate gene silencing products.

For independent verification of MAGI-2 (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-42002A, sc-42002B and sc-42002C.

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

MAGI-2 siRNA (h) is recommended for the inhibition of MAGI-2 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 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

MAGI-2 (6F5): sc-517008 is recommended as a control antibody for monitoring of MAGI-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 MAGI-2 gene expression knockdown using RT-PCR Primer: MAGI-2 (h)-PR: sc-42002-PR (20 μ l, 580 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Valle, B.L., et al. 2020. HIST1H2BB and MAGI2 methylation and somatic mutations as precision medicine biomarkers for diagnosis and prognosis of high-grade serous ovarian cancer. *Cancer Prev. Res.* E-published.

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.