

GATAD2A siRNA (h): sc-97791

BACKGROUND

GATAD2A (GATA zinc finger domain containing 2A), also known as p66 α , is a ubiquitously expressed, highly conserved protein that is essential for development. GATAD2A contains a GATA-type zinc finger and is a component of the NuRD (nucleosome remodeling and histone deacetylation) complex along with MBD2, HDAC1 and HDAC2. The NuRD complex is associated with ATP-dependent chromatin-remodeling and histone deacetylase activity. GATAD2A interacts with MBD2 and MBD3 and colocalizes with MBD2 in nuclear speckles. This interaction enhances repression mediated by MBD2 and allows for the interaction with histone tails. GATAD2A contains two domains involved in transcriptional repression. For functional repressor activity, GATAD2A requires SUMOylation at Lys-30 and Lys-487.

REFERENCES

1. Brackertz, M., et al. 2002. Two highly related p66 proteins comprise a new family of potent transcriptional repressors interacting with MBD2 and MBD3. *J. Biol. Chem.* 277: 40958-40966.
2. Gururaja, T., et al. 2003. Use of MEDUSA-based data analysis and capillary HPLC-ion-trap mass spectrometry to examine complex immunoaffinity extracts of RbAp48. *J. Proteome Res.* 1: 253-261.
3. Jin, S.G., et al. 2005. MBD3L2 interacts with MBD3 and components of the NuRD complex and can oppose MBD2-MeCP1-mediated methylation silencing. *J. Biol. Chem.* 280: 12700-12709.
4. Kon, C., et al. 2005. Developmental roles of the Mi-2/NuRD-associated protein p66 in *Drosophila*. *Genetics* 169: 2087-2100.
5. Gong, Z., et al. 2006. SUMO modification enhances p66-mediated transcriptional repression of the Mi-2/NuRD complex. *Mol. Cell. Biol.* 26: 4519-4528.
6. Brackertz, M., et al. 2006. p66 α and p66 β of the Mi-2/NuRD complex mediate MBD2 and histone interaction. *Nucleic Acids Res.* 34: 397-406.
7. Marino, S. and Nusse, R. 2007. Mutants in the mouse NuRD/Mi2 component P66 α are embryonic lethal. *PLoS ONE* 2: e519.

CHROMOSOMAL LOCATION

Genetic locus: GATAD2A (human) mapping to 19p13.11.

PRODUCT

GATAD2A 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 GATAD2A shRNA Plasmid (h): sc-97791-SH and GATAD2A shRNA (h) Lentiviral Particles: sc-97791-V as alternate gene silencing products.

For independent verification of GATAD2A (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-97791A, sc-97791B and sc-97791C.

RESEARCH USE

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

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

GATAD2A siRNA (h) is recommended for the inhibition of GATAD2A 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

GATAD2A (G-9): sc-514987 is recommended as a control antibody for monitoring of GATAD2A 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 GATAD2A gene expression knockdown using RT-PCR Primer: GATAD2A (h)-PR: sc-97791-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.