

# PHF21A siRNA (m): sc-152215

## BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. PHF21A (PHD finger protein 21A), also known as BRAF35-HDAC complex protein BHC80, is a 680 amino acid nuclear protein that contains one PHD-type zinc finger and one A.T hook DNA-binding domain, suggesting involvement in transcriptional regulation events. PHF21A is a component of the BHC complex, which is responsible for repressing transcription of neuron-specific genes in non-neuronal cells. The BHC complex acts as a chromatin modifier that deacetylates and demethylates specific sites on histones. PHF21A may act as a scaffold within the BHC complex. Predominantly expressed in brain, three isoforms of PHF21A exist as a result of alternative splicing events.

## REFERENCES

1. Hakimi, M.A., et al. 2002. A core-BRAF35 complex containing histone deacetylase mediates repression of neuronal-specific genes. *Proc. Natl. Acad. Sci. USA* 99: 7420-7425.
2. Hakimi, M.A., et al. 2003. A candidate X-linked mental retardation gene is a component of a new family of histone deacetylase-containing complexes. *J. Biol. Chem.* 278: 7234-7239.
3. Iwase, S., et al. 2004. Characterization of BHC80 in BRAF-HDAC complex, involved in neuron-specific gene repression. *Biochem. Biophys. Res. Commun.* 322: 601-608.
4. Shi, Y.J., et al. 2005. Regulation of LSD1 histone demethylase activity by its associated factors. *Mol. Cell* 19: 857-864.
5. Lakowski, B., et al. 2006. CoREST-like complexes regulate chromatin modification and neuronal gene expression. *J. Mol. Neurosci.* 29: 227-239.
6. Hailesellasse Sene, K., et al. 2007. Gene function in early mouse embryonic stem cell differentiation. *BMC Genomics* 8: 85.
7. Lan, F., et al. 2007. Recognition of unmethylated histone H3 lysine 4 links BHC80 to LSD1-mediated gene repression. *Nature* 448: 718-722.
8. Kim, B.J., et al. 2008. Esco2 is a novel corepressor that associates with various chromatin modifying enzymes. *Biochem. Biophys. Res. Commun.* 372: 298-304.

## CHROMOSOMAL LOCATION

Genetic locus: Phf21a (mouse) mapping to 2 E1.

## PRODUCT

PHF21A 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PHF21A shRNA Plasmid (m): sc-152215-SH and PHF21A shRNA (m) Lentiviral Particles: sc-152215-V as alternate gene silencing products.

For independent verification of PHF21A (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-152215A, sc-152215B and sc-152215C.

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

## APPLICATIONS

PHF21A siRNA (m) is recommended for the inhibition of PHF21A 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  $\mu$ M in 66  $\mu$ 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 PHF21A gene expression knockdown using RT-PCR Primer: PHF21A (m)-PR: sc-152215-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.