

PHF21A (H-110): sc-98761

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

- 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.
- 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.
- 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.
- Shi, Y.J., et al. 2005. Regulation of LSD1 histone demethylase activity by its associated factors. *Mol. Cell* 19: 857-864.
- Lakowski, B., et al. 2006. CoREST-like complexes regulate chromatin modification and neuronal gene expression. *J. Mol. Neurosci.* 29: 227-239.
- Hailleselle Sene, K., et al. 2007. Gene function in early mouse embryonic stem cell differentiation. *BMC Genomics* 8: 85.
- Lan, F., et al. 2007. Recognition of unmethylated histone H3 lysine 4 links BHC80 to LSD1-mediated gene repression. *Nature* 448: 718-722.
- 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.
- Klajn, A., et al. 2009. The rest repression of the neurosecretory phenotype is negatively modulated by BHC80, a protein of the BRAF/HDAC complex. *J. Neurosci.* 29: 6296-6307.

CHROMOSOMAL LOCATION

Genetic locus: PHF21A (human) mapping to 11p11.2; Phf21a (mouse) mapping to 2 E1.

SOURCE

PHF21A (H-110) is a rabbit polyclonal antibody raised against amino acids 571-675 mapping at the C-terminus of PHF21A of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PHF21A (H-110) is recommended for detection of PHF21A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PHF21A (H-110) is also recommended for detection of PHF21A in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PHF21A siRNA (h): sc-96691, PHF21A siRNA (m): sc-152215, PHF21A shRNA Plasmid (h): sc-96691-SH, PHF21A shRNA Plasmid (m): sc-152215-SH, PHF21A shRNA (h) Lentiviral Particles: sc-96691-V and PHF21A shRNA (m) Lentiviral Particles: sc-152215-V.

Molecular Weight of PHF21A: 75 kDa.

Positive Controls: IMR-32 nuclear extract: sc-2148 or SK-N-MC nuclear extract: sc-2154.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.