

# hole (H-146): sc-134695

## BACKGROUND

Hole, alternatively known as TMEM121 (transmembrane protein 121), is a 319 amino acid multi-pass membrane protein. Known to localize to chick heart and brain, hole is thought to be a novel gene product which has also been identified in mouse brain. The gene encoding hole maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder  $\alpha$ 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

## REFERENCES

1. Nasset, A.L. and Bader, D.M. 2002. Hole is a novel gene product expressed in the developing heart and brain. *Mech. Dev.* 117: 347-350.
2. Avramopoulos, D., Fallin, M.D. and Bassett, S.S. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 132B: 9-13.
3. Filley, C.M., Rollins, Y.D., Anderson, C.A., Arciniegas, D.B., Howard, K.L., Murrell, J.R., Boyer, P.J., Kleinschmidt-DeMasters, B.K. and Ghetti, B. 2007. The genetics of very early onset Alzheimer disease. *Cogn. Behav. Neurol.* 20: 149-156.
4. Ting, S.M., Toth, T. and Caskey, F. 2008.  $\alpha$ 1-antitrypsin (A1AT) deficiency presenting with IgA nephropathy and nephrotic syndrome: is renal involvement caused by A1AT deposition? *Clin. Nephrol.* 70: 159-162.
5. Lerner, A.J. and Doran, M. 2009. Genotype-phenotype relationships of presenilin-1 mutations in Alzheimer's disease: an update. *J. Alzheimers Dis.* 17: 259-265.
6. Topic, A., Alempijevic, T., Milutinovic, A.S. and Kovacevic, N. 2009.  $\alpha$ 1-antitrypsin phenotypes in adult liver disease patients. *Ups. J. Med. Sci.* 114: 228-234.

## CHROMOSOMAL LOCATION

Genetic locus: TMEM121 (human) mapping to 14q32.33; Tmem121 (mouse) mapping to 12 F1.

## SOURCE

hole (H-146) is a rabbit polyclonal antibody raised against amino acids 129-274 mapping within an internal region of hole of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

hole (H-146) is recommended for detection of hole of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

hole (H-146) is also recommended for detection of hole in additional species, including canine and bovine.

Suitable for use as control antibody for hole siRNA (h): sc-92182, hole siRNA (m): sc-146067, hole shRNA Plasmid (h): sc-92182-SH, hole shRNA Plasmid (m): sc-146067-SH, hole shRNA (h) Lentiviral Particles: sc-92182-V and hole shRNA (m) Lentiviral Particles: sc-146067-V.

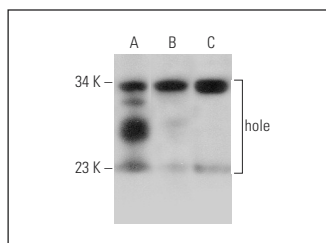
Molecular Weight of hole: 36 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse cerebellum extract: sc-2403 or Neuro-2A whole cell lysate: sc-364185.

## 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.

## DATA



hole (H-146): sc-134695. Western blot analysis of hole expression in mouse brain (A) and mouse cerebellum (B) tissue extracts and Neuro-2A whole cell lysate (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) or our catalog for detailed protocols and support products.