

# NPAS2 (H-270): sc-28708

## BACKGROUND

Members of the basic helix-loop-helix-PER-ARNT-SIM (bHLH-PAS) family are transcription factors that contain a bHLH DNA binding domain located amino-terminal to a PAS domain. Neuronal PAS domain protein 2 (NPAS2, also designated PAS 4/MOP4) is a member of the bHLH-PAS family and the PAS superfamily. NPAS2 is expressed primarily in the neurons during the first week of postnatal development. The pattern of NPAS2 expression temporally matches the development of learning and memory, and spatially matches the frontal association/limbic forebrain pathway. NPAS2 may serve a regulatory role in the development and maintenance of long-term memory, and may be required for the processing of complex sensory information. NPAS2 and MOP3 form a transcriptionally active heterodimer which binds to a CACGTGA-containing DNA element and drives transcription from a linked luciferase reporter gene.

## REFERENCES

- Hogenesch, J.B., et al. 1997. Characterization of a subset of the basic-helix-loop-helix-PAS superfamily that interacts with components of the dioxin signaling pathway. *J. Biol. Chem.* 272: 8581-8593.
- Zhou, Y.D., et al. 1997. Molecular characterization of two mammalian bHLH-PAS domain proteins selectively expressed in the central nervous system. *Proc. Natl. Acad. Sci. USA* 94: 713-718.
- Hogenesch, J.B., et al. 1998. The basic-helix-loop-helix-PAS orphan MOP3 forms transcriptionally active complexes with circadian and hypoxia factors. *Proc. Natl. Acad. Sci. USA* 95: 5474-5479.
- Garcia, J.A., et al. 2000. Impaired cued and contextual memory in NPAS2-deficient mice. *Science* 288: 2226-2230.
- Chong, N.W., et al. 2000. Characterization of the chicken serotonin N-acetyltransferase gene. Activation via clock gene heterodimer/E box interaction. *J. Biol. Chem.* 275: 32991-32998.

## CHROMOSOMAL LOCATION

Genetic locus: NPAS2 (human) mapping to 2q11.2; Npas2 (mouse) mapping to 1 B.

## SOURCE

NPAS2 (H-270) is a rabbit polyclonal antibody raised against amino acids 705-824 mapping at the C-terminus of NPAS2 of human origin.

## PRODUCT

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

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-28708 X, 200 µg/0.1 ml.

## STORAGE

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

## APPLICATIONS

NPAS2 (H-270) is recommended for detection of NPAS2 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).

Suitable for use as control antibody for NPAS2 siRNA (h): sc-38169, NPAS2 siRNA (m): sc-38170, NPAS2 shRNA Plasmid (h): sc-38169-SH, NPAS2 shRNA Plasmid (m): sc-38170-SH, NPAS2 shRNA (h) Lentiviral Particles: sc-38169-V and NPAS2 shRNA (m) Lentiviral Particles: sc-38170-V.

NPAS2 (H-270) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of NPAS2: 91 kDa.

## 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.

## SELECT PRODUCT CITATIONS

- Hoffman, A.E., et al. 2008. The circadian gene NPAS2, a putative tumor suppressor, is involved in DNA damage response. *Mol. Cancer Res.* 6: 1461-1468.
- Yi, C.H., et al. 2009. Cancer-related transcriptional targets of the circadian gene NPAS2 identified by genome-wide ChIP-on-chip analysis. *Cancer Lett.* 284: 149-156.

## 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.



Try **NPAS2 (FT-68): sc-134404**, our highly recommended monoclonal alternative to NPAS2 (H-270).