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Anti-NPAS4 Antibody

Catalog # AP53859

Product Information

Application	WB, IHC, IF/IC
Primary Accession	Q8IUM7
Reactivity	Human, Pig, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	87117

Additional Information

Gene ID	266743
Other Names	BHLHE79; NXF; PASD10; Neuronal PAS domain-containing protein 4; Neuronal PAS4; Class E basic helix-loop-helix protein 79; bHLHe79; HLH-PAS transcription factor NXF; PAS domain-containing protein 10
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human NPAS4. The exact sequence is proprietary.
Dilution	WB~~1/500 - 1/1000 IHC~~1/50 - 1/200 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

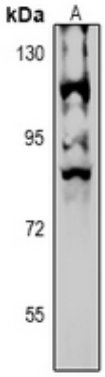
Name	NPAS4 (HGNC:18983)
Function	Transcription factor expressed in neurons of the brain that regulates the excitatory-inhibitory balance within neural circuits and is required for contextual memory in the hippocampus (By similarity). Plays a key role in the structural and functional plasticity of neurons (By similarity). Acts as an early-response transcription factor in both excitatory and inhibitory neurons, where it induces distinct but overlapping sets of late-response genes in these two types of neurons, allowing the synapses that form on inhibitory and excitatory neurons to be modified by neuronal activity in a manner specific to their function within a circuit, thereby facilitating appropriate circuit responses to sensory experience (By similarity). In excitatory neurons, activates transcription of BDNF, which in turn controls the number of GABA-releasing synapses that form on excitatory neurons, thereby promoting an increased number of inhibitory synapses on excitatory neurons (By similarity). In inhibitory neurons, regulates a distinct set of target genes that serve to

increase excitatory input onto somatostatin neurons, probably resulting in enhanced feedback inhibition within cortical circuits (By similarity). The excitatory and inhibitory balance in neurons affects a number of processes, such as short-term and long-term memory, acquisition of experience, fear memory, response to stress and social behavior (By similarity). Acts as a regulator of dendritic spine development in olfactory bulb granule cells in a sensory-experience-dependent manner by regulating expression of MDM2 (By similarity). Efficient DNA binding requires dimerization with another bHLH protein, such as ARNT, ARNT2 or BMAL1 (PubMed:14701734). Can activate the CME (CNS midline enhancer) element (PubMed:14701734).

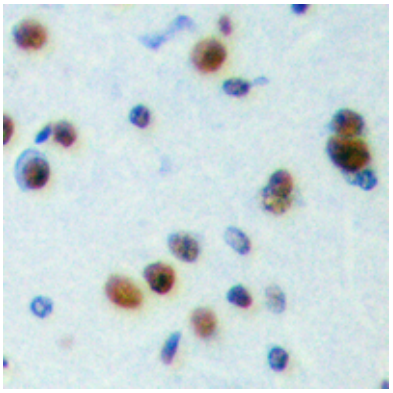
Cellular Location Nucleus {ECO:0000250|UniProtKB:Q8BGD7, ECO:0000255|PROSITE-ProRule:PRU00981}

Tissue Location Brain..

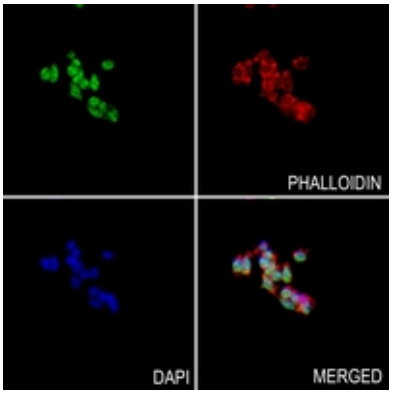
Images



Western blot analysis of NPAS4 expression in U87MG (A) whole cell lysates. (Predicted band size: 87 kD; Observed band size: 87 kD)

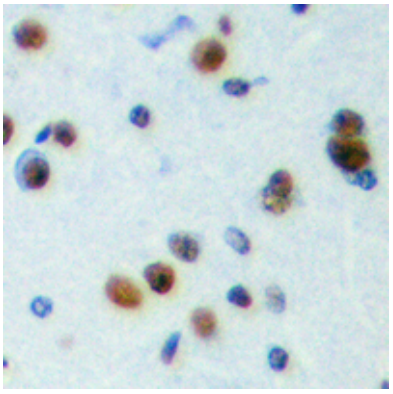


Immunohistochemical analysis of NPAS4 staining in human brain formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of NPAS4 staining in MDAMB231 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with an AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

Immunohistochemical analysis of NPAS4 staining in



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