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[Primary Antibody]

Rabbit Anti-PHOX2B antibody

Catalog Number: SL11578R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	PHOX2B
Immunogen:	KLH conjugated synthetic peptide derived from human PHOX2B: 101-200/314
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	WB=1:500-2000 IHC-P=1:100-500 IHC-F=1:100-500 ICC/IF=1:100-500 IF=1:100-500 ELISA=1:5000-10000 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	(predicted: Human, Mouse, Rat, Chicken, Dog, Pig, Cow, Horse, Rabbit)
Predicted MW.:	32kDa
Subcellular Location:	The nucleus
Background:	Phox2a (also designated Arix1) and Phox2b are closely related, paired-homeodomain transcription factors that are necessary for neuronal differentiation throughout the developing sympathetic, parasympathetic and enteric ganglia. All enteric nervous system cells evolve from the neural crest, and all cells that are undifferentiated initially express Phox2b. The cells that begin to differentiate along a neuronal lineage continue to express Phox2b, and begin to express Phox2a. Phox2b is required for the differentiation of all central and nonperipheral noradrenergic centers in the brain. In contrast, Phox2a controls only the

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differentiation of the main noradrenergic center of the brain, the locus coeruleus. Both Phox2a and Phox2b are crucial for the regulation of endogenous tyrosine hydroxylase and dopamine-beta hydroxylase, which are transiently expressed in neural crest cells.
In addition, Phox2 proteins are sufficient to promote sympathetic neuron generation. The gene which encodes Phox2a maps to human chromosome 11q13.3-q13.4.
Function: Involved in the development of several major noradrenergic neuron populations, including the locus coeruleus. Transcription factor which could determine a neurotransmitter phenotype in vertebrates. Enhances second-messenger-mediated activation of the dopamine beta-hydrolase and c-fos promoters, and of several enhancers including cAMP-response element and serum-response element.
Subunit: Interacts with TRIM11
Subcellular Location: Nucleus.
Tissue Specificity: Expressed in neuroblastoma, brain and adrenal gland.
DISEASE: Defects in PHOX2B are a cause of congenital central hypoventilation syndrome (CCHS) [MIM:209880]; also known as congenital failure of autonomic control or Ondine curse. Most mutations consist of 5-10 alanine expansions in the poly-Ala region from amino acids 241-260. CCHS is a rare disorder characterized by abnormal control of respiration in the absence of neuromuscular or lung disease, or an identifiable brain stem lesion. A deficiency in autonomic control of respiration results in inadequate or negligible ventilatory and arousal responses to hypercapnia and hypoxemia. CCHS is frequently complicated with neurocristopathies such as Hirschsprung disease that occurs in about 16% of CCHS cases.
Defects in PHOX2B are the cause of susceptibility to neuroblastoma type 2 (NBLST2) [MIM:613013]. A common neoplasm of early childhood arising from embryonic cells that form the primitive neural crest and give rise to the adrenal medulla and the sympathetic nervous system.
Similarity: Belongs to the paired homeobox family.
Contains 1 homeobox DNA-binding domain.
Database links:
Entrez Gene: 8929 Human
Entrez Gene: 18935 Mouse
Omim: 603851 Human
SwissProt: Q99453 Human
SwissProt: O35690 Mouse
Unigene: 87202 Human
Unigene: 62505 Mouse

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