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CHX10 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP58479

Product Information

Application	WB, E
Primary Accession	P58304
Reactivity	Rat, Pig, Dog, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	39411
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CHX10
Epitope Specificity	251-361/361
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Nucleus.
SIMILARITY	Belongs to the paired homeobox family.Contains 1 CVC domain.Contains 1 homeobox DNA-binding domain.
DISEASE	Defects in VSX2 are the cause of microphthalmia isolated type 2 (MCOP2) [MIM:610093]; also known as isolated clinical anophthalmia. Microphthalmia is a clinically heterogeneous disorder of eye formation, ranging from small size of a single eye to complete bilateral absence of ocular tissues. Ocular abnormalities like opacities of the cornea and lens, scaring of the retina and choroid, cataractand other abnormalities like cataract may also be present. Defects in VSX2 are the cause of microphthalmia with cataracts and iris abnormalities (MCOPCTI) [MIM:610092]. Defects in VSX2 are the cause of microphthalmia isolated with coloboma type 3 (MCOPCB3) [MIM:610092]; also known as isolated colobomatous microphthalmia 3. Ocular colobomas are a set of malformations resulting from abnormal morphogenesis of the optic cup and stalk, and the fusion of the fetal fissure (optic fissure).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	CHX10 is a 40kDa homeodomain protein of the paired-like class that is essential for development of the mammalian eye. Mutations in CHX10 cause microphthalmia, a cause of congenital blindness in humans, and the ocular retardation (or) phenotype in mice. In the developing mouse retina CHX10 is expressed in retinal progenitors, while in the mature retina, CHX10 expression becomes restricted to bipolar neurons. Concurrent with these expression patterns, the CHX10-/- (or) retina is thin due to a defect in proliferation of retinal progenitors, and lacks bipolar neurons. CHX10 is also expressed in the developing brainstem, thalamus, and spinal cord.

Additional Information

Gene ID	338917
Other Names	Visual system homeobox 2, Ceh-10 homeodomain-containing homolog, Homeobox protein CHX10, VSX2, CHX10, HOX10
Target/Specificity	Abundantly expressed in retinal neuroblasts during eye development and in the inner nuclear layer of the adult retina. Within this layer, expression is stronger in the outer margin where bipolar cells predominate.
Dilution	WB=1:500-2000,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	VSX2
Synonyms	CHX10, HOX10
Function	Acts as a transcriptional regulator through binding to DNA at the consensus sequence 5'-[TC]TAATT[AG][AG]-3' upstream of gene promoters (PubMed:27301076). Plays a significant role in the specification and morphogenesis of the sensory retina (By similarity). May play a role in specification of V2a interneurons during spinal cord development (By similarity). Mediates differentiation of V2a interneurons by repression of motor neuron gene transcription, via competitively binding to response elements that are activated by the ISL1-LHX3 complex, such as VSX1 (PubMed:17919464, PubMed:27477290). Acts as a positive transcriptional regulator of NXNL1; regulation is significantly increased in synergy with VSX1 (By similarity). Acts as a negative transcriptional regulator of MITF (By similarity). Represses SAG transcription by competitive inhibition of ISL1-LHX3 response elements (PubMed:16236706, PubMed:27477290). Binds to the photoreceptor conserved element-1 (PCE-1) in the promoter of rod photoreceptor arrestin SAG and acts as a transcriptional repressor (By similarity). Involved in the development of retinal ganglion cells (RGCs) which leads to release of SHH by RGCs, promoting Hedgehog signaling and subsequent proliferation of retinal progenitor cells (By similarity). Participates in the development of the cells of the inner nuclear layer, by promoting postnatal differentiation of bipolar cells with a comparable inhibition of rod cell differentiation (By similarity). May play a role in the maintenance of neural retina identity during development by regulation of canonical Wnt genes and CTNNB1 localization, suggesting a role in the regulation of canonical Wnt signaling (PubMed:27301076).
Cellular Location	Nucleus {ECO:0000250|UniProtKB:Q61412}.
Tissue Location	Abundantly expressed in retinal neuroblasts during eye development and in the inner nuclear layer of the adult retina Within this layer, expression is stronger in the outer margin where bipolar cells predominate