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Six3 Rabbit pAb

Catalog # AP97481

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	O95343
Other Accession	O95343
Predicted	Rat, Pig, Human, Mouse, Rabbit, Dog, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	35487
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Six3
Epitope Specificity	151-250/332
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the SIX/Sine oculis homeobox family. Contains 1 homeobox DNA-binding domain.
DISEASE	Defects in SIX3 are the cause of holoprosencephaly type 2 (HPE2) [MIM:157170]. Holoprosencephaly (HPE) [MIM:236100] is the most common structural anomaly of the brain, in which the developing forebrain fails to correctly separate into right and left hemispheres. Holoprosencephaly is genetically heterogeneous and associated with several distinct facies and phenotypic variability.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The Six proteins (sine oculis) are a family of homeodomain transcription factors that share a conserved DNA binding domain. Six3 is required for the specification and proliferation of the eye field in vertebrates and may be involved in some developmental disorders of the brain. Expression of Six3 is detected in human embryos as early as five to seven weeks of gestation, and is maintained in the eye throughout the entire period of fetal development. At 20 weeks of gestation, expression of Six3 in the human retina has been observed in ganglion cells and in cells of the inner nuclear layer. Six3 maps to human chromosome 2p16-p21, between genetic markers D2S119 and D2S288. The map position of human Six3 overlaps the positions of two dominant disorders (holoprosencephaly type 2 and Malattia leventinese) with ocular phenotypes that have been assigned to this chromosomal region.

Additional Information

Gene ID	6496
Other Names	HPE2; E130112M24Rik; Six3a; Six3alpha; Six3b; Six3beta; SIX3_HUMAN; SIX3; Sine oculis homeobox homolog 3; SIX3_MOUSE; SIX homeobox 3; holoprosencephaly 2, alobar or semilobar; sine oculis homeobox homolog 3

	(Drosophila)
Dilution	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
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	SIX3
Function	Transcriptional regulator which can act as both a transcriptional repressor and activator by binding a ATTA homeodomain core recognition sequence on these target genes. During forebrain development represses WNT1 expression allowing zona limitans intrathalamica formation and thereby ensuring proper anterio-posterior patterning of the diencephalon and formation of the rostral diencephalon. Acts as a direct upstream activator of SHH expression in the rostral diencephalon ventral midline and that in turn SHH maintains its expression. In addition, Six3 activity is required for the formation of the telencephalon. During postnatal stages of brain development is necessary for ependymal cell maturation by promoting the maturation of radial glia into ependymal cells through regulation of neuroblast proliferation and migration. Acts on the proliferation and differentiation of neural progenitor cells through activating transcription of CCND1 and CCND2. During early lens formation plays a role in lens induction and specification by activating directly PAX6 in the presumptive lens ectoderm. In turn PAX6 activates SIX3 resulting in activation of PDGFRA and CCND1 promoting cell proliferation. Also is required for the neuroretina development by directly suppressing WNT8B expression in the anterior neural plate territory. Its action during retina development and lens morphogenesis is TLE5 and TLE4-dependent manner. Furthermore, during eye development regulates several genes expression. Before and during early lens development represses the CRYGF promoter by binding a SIX repressor element. Directly activates RHO transcription, or cooperates with CRX or NRL. Six3 also functions in the formation of the proximodistal axis of the optic cup, and promotes the formation of optic vesicles-like structures. During pituitary development, acts in parallel or alternatively with HESX1 to control cell proliferation through Wnt/beta-catenin pathway (By similarity). Plays a role in eye development by suppressing WNT1 expression and in dorsal-ventral patterning by repressing BMP signaling pathway.
Cellular Location	Nucleus {ECO:0000250|UniProtKB:Q62233, ECO:0000255|PROSITE-ProRule:PRU00108}

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