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PROX1 Antibody (S197)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2035d

Product Information

Application	WB, E
Primary Accession	Q92786
Other Accession	P48437, NP_002754
Reactivity	Human, Mouse
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	83203
Antigen Region	175-206

Additional Information

Gene ID	5629
Other Names	Prospero homeobox protein 1, Homeobox prospero-like protein PROX1, PROX-1, PROX1
Target/Specificity	This PROX1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 175-206 amino acids from human PROX1.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PROX1 Antibody (S197) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PROX1
Function	Transcription factor involved in developmental processes such as cell fate determination, gene transcriptional regulation and progenitor cell regulation in a number of organs. Plays a critical role in embryonic development and

	functions as a key regulatory protein in neurogenesis and the development of the heart, eye lens, liver, pancreas and the lymphatic system. Involved in the regulation of the circadian rhythm. Represses: transcription of the retinoid-related orphan receptor RORG, transcriptional activator activity of RORA and RORG and the expression of RORA/G-target genes including core clock components: BMAL1, NPAS2 and CRY1 and metabolic genes: AVPR1A and ELOVL3.
Cellular Location	Nucleus {ECO:0000250|UniProtKB:P48437}. Note=RORG promotes its nuclear localization. {ECO:0000250|UniProtKB:P48437}
Tissue Location	Most actively expressed in the developing lens. Detected also in embryonic brain, lung, liver and kidney. In adult, it is more abundant in heart and liver than in brain, skeletal muscle, kidney and pancreas.

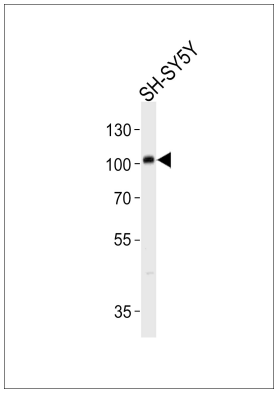
Background

The expression pattern of Prox1 suggests that it has a role in a variety of embryonic tissues, including lens. Prox mRNA is present in many different human tissues with lens demonstrating the highest level. Homozygous Prox1-null mice die at midgestation from multiple developmental defects, and a targeted effect on lens development has been reported. Prox1 inactivation caused abnormal cellular proliferation, downregulated expression of the cell cycle inhibitors Cdkn1b and Cdkn1c, misexpression of E-cadherin, and excessive apoptosis. Consequently, mutant lens cells failed to polarize and elongate properly, resulting in a hollow lens. Prox1 is expressed in a subpopulation of endothelial cells that by budding and sprouting give rise to the lymphatic system. Prox1 appears to be a specific and required regulator of the development of the lymphatic system. Prox1 also has been documented to be required for hepatocyte migration in the mouse. Loss of Prox1 results in a smaller liver with a reduced population of clustered hepatocytes. The homeodomain protein Prox1 regulates the egress of progenitor cells from the cell cycle in the embryonic mouse retina. Cells lacking Prox1 are less likely to stop dividing, and ectopic expression of Prox1 forces progenitor cells to exit the cell cycle. Prox1 acts as a key participant in progenitor-cell proliferation and cell-fate determination in the vertebrate retina.

References

Nagai, H., et al., Genes Chromosomes Cancer 38(1):13-21 (2003).
Dyer, M.A., et al., Nat. Genet. 34(1):53-58 (2003).
Hong, Y.K., et al., Dev. Dyn. 225(3):351-357 (2002).
Petrova, T.V., et al., EMBO J. 21(17):4593-4599 (2002).
Mouta Carreira, C., et al., Cancer Res. 61(22):8079-8084 (2001).

Images



PROX-1 Antibody (S197) (Cat. #AP2035d) western blot analysis in SH-SY5Y cell line lysates (35ug/lane).This demonstrates the PROX-1 antibody detected the PROX-1 protein (arrow).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.