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PROX1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2035B

Product Information

Application	IF, WB, E
Primary Accession	Q92786
Other Accession	P48437, NP_002754
Reactivity	Human, Mouse
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	83203
Antigen Region	492-522

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 492-522 amino acids from the C-terminal region of human PROX1.
Dilution	IF~~1:10~50 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 prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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 (C-term) 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.

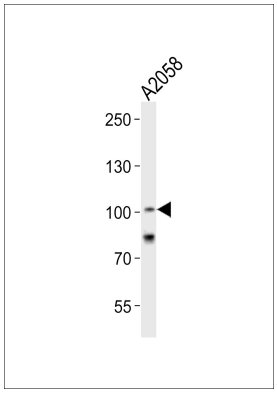
Background

The expression pattern of the Prox1 homeo box gene suggests that it has a role in a variety of embryonic tissues, including lens. Analysis of mRNA reveals that Prox mRNA is present in many different human tissues and that lens demonstrated 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. The Prox1 gene 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 document 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

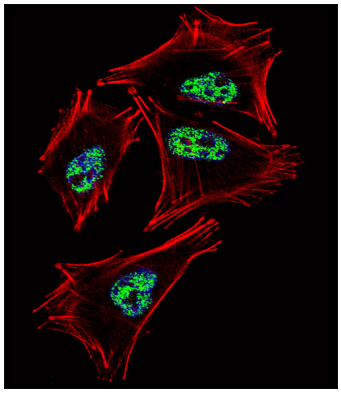
Nagai, H., et al., Genes Chromosomes Cancer 38(1):13-21 (2003).
Dyer, M.A., et al., Nat. Genet. 34(1):53-58 (2003).
Hong, Y.K., et al., Dev. Dyn. 225(3):351-357 (2002).
Petrova, T.V., et al., EMBO J. 21(17):4593-4599 (2002).
Mouta Carreira, C., et al., Cancer Res. 61(22):8079-8084 (2001).

Images



Western blot analysis of lysate from A2058 cell line, using PROX1 Antibody (C-term)(Cat. #AP2035b). AP2035b was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysate at 20ug.

Fluorescent confocal image of A2058 cell stained with



PROX1 Antibody (C-term)(Cat#AP2035b).A2058 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with PROX1 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min). PROX1 immunoreactivity is localized to Nucleus significantly.