abcam

Product datasheet

Anti-PAX6 antibody ab5790

22 Abreviews 108 References 3 Images

Overview

Product name	Anti-PAX6 antibody
Description	Rabbit polyclonal to PAX6
Host species	Rabbit
Specificity	This antibody does not detect bovine PAX6 by Western blot. We have had mixed results for use of this antibody in IHC-Fr. Thus, we are removing IHC-Fr as a guaranteed application and welcome any feedback from customers who have used this antibody in IHC-Fr.
Tested applications	**Suitable for:** IP, ICC/IF, WB
Species reactivity	**Reacts with:** Mouse, Rat, Human, Monkey **Predicted to work with:** Chicken, Xenopus laevis, Non human primates, Zebrafish
Immunogen	Synthetic peptide corresponding to Mouse PAX6 aa 267-285. Sequence: REEKLRNQRRQASNTPSHI Database link: **P63015** (Peptide available as **ab5895**) Run BLAST with Run BLAST with
Positive control	ICC: ATRA treated NCCIT cells; WB: rat whole eye extract; human 293T, HepG2, U20S, MCF7, Jurkat NCCIT cells; monkey COS7, mouse C2C12 cells; IP: 293T cells
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -

	80°C. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.05% Sodium azide Constituents: 0.1% BSA, 99% PBS
Purity	Immunogen affinity purified
Primary antibody notes	PAX genes encode nuclear transcription factors which are regarded as major controllers of developmental processes in both vertebrates and invertebrates. Mutations in murine PAX genes underlie three natural mouse alleles and several corresponding human syndromes (aniridia, foveal hypoplasia and Peters' anomaly). Murine PAX genes have been shown to be proto-oncogenes. Furthermore, human PAX genes have recently been demonstrated to play an influential part in some common human cancers such as brain tumors and lymphomas. All PAX genes encode a DNA-binding domain termed the paired domain and in addition some also encode a second binding domain--the paired type homeobox. PAX6 is involved in the early development of the optical vesicle and has been shown to interact with Six3, another important visual development protein.
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab5790 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

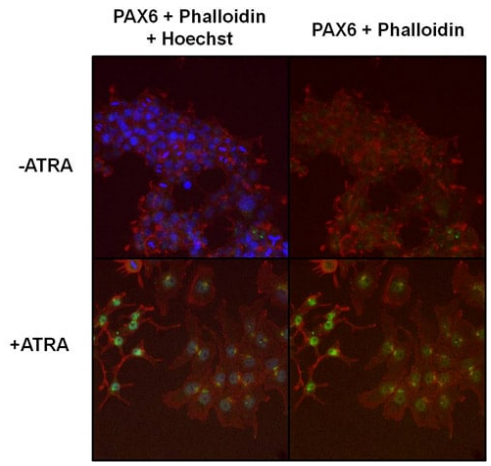
Application	Abreviews	Notes
IP		Use a concentration of 5 µg/ml.
ICC/IF	★★★★☆ **(7)**	1/50.
WB	★★★☆☆ **(6)**	1/1000. Detects a band of approximately 47 kDa (predicted molecular weight: 50.6 kDa).Can be blocked with **PAX6 peptide (ab5895)**. This antibody can be blocked with **ab5895**.

Target

Function	Transcription factor with important functions in the development of the eye, nose, central nervous system and pancreas. Required for the differentiation of pancreatic islet alpha cells (By similarity). Competes with PAX4 in binding to a common element in the glucagon, insulin and somatostatin promoters. Regulates specification of the ventral neuron subtypes by establishing the correct progenitor domains (By similarity). Isoform 5a appears to function as a molecular switch that specifies target genes.
Tissue specificity	Fetal eye, brain, spinal cord and olfactory epithelium. Isoform 5a is less abundant than the PAX6 shorter form.
Involvement in disease	Defects in PAX6 are the cause of aniridia (AN) [MIM:106210]. A congenital, bilateral, panocular disorder characterized by complete absence of the iris or extreme iris hypoplasia. Aniridia is not just an isolated defect in iris development but it is associated with macular and optic nerve hypoplasia, cataract, corneal changes, nystagmus. Visual acuity is generally low but is unrelated to the degree of iris hypoplasia. Glaucoma is a secondary problem causing additional visual loss

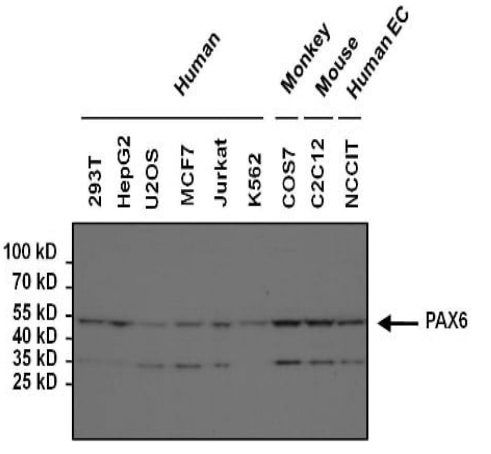
	over time. Defects in PAX6 are a cause of Peters anomaly (PAN) [MIM:604229]. Peters anomaly consists of a central corneal leukoma, absence of the posterior corneal stroma and Descemet membrane, and a variable degree of iris and lenticular attachments to the central aspect of the posterior cornea. Defects in PAX6 are a cause of foveal hypoplasia (FOVHYP) [MIM:136520]. Foveal hypoplasia can be isolated or associated with presenile cataract. Inheritance is autosomal dominant. Defects in PAX6 are a cause of keratitis hereditary (KERH) [MIM:148190]. An ocular disorder characterized by corneal opacification, recurrent stromal keratitis and vascularization. Defects in PAX6 are a cause of coloboma ocular (COLO) [MIM:120200]; also known as uveoretinal coloboma or coloboma of iris, choroid and retina. 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). Severe colobomatous malformations may cause as much as 10% of the childhood blindness. The clinical presentation of ocular coloboma is variable. Some individuals may present with minimal defects in the anterior iris leaf without other ocular defects. More complex malformations create a combination of iris, uveoretinal and/or optic nerve defects without or with microphthalmia or even anophthalmia. Defects in PAX6 are a cause of coloboma of optic nerve (COLON) [MIM:120430]. Defects in PAX6 are a cause of bilateral optic nerve hypoplasia (BONH) [MIM:165550]; also known as bilateral optic nerve aplasia. A congenital anomaly in which the optic disc appears abnormally small. It may be an isolated finding or part of a spectrum of anatomic and functional abnormalities that includes partial or complete agenesis of the septum pellucidum, other midline brain defects, cerebral anomalies, pituitary dysfunction, and structural abnormalities of the pituitary. Defects in PAX6 are a cause of aniridia cerebellar ataxia and mental deficiency (ACAMD) [MIM:206700]; also known as Gillespie syndrome. A rare condition consisting of partial rudimentary iris, cerebellar impairment of the ability to perform coordinated voluntary movements, and mental retardation.
Sequence similarities	Belongs to the paired homeobox family. Contains 1 homeobox DNA-binding domain. Contains 1 paired domain.
Developmental stage	Expressed in the developing eye and brain.
Post-translational modifications	Ubiquitinated by TRIM11, leading to ubiquitination and proteasomal degradation.
Cellular localization	Nucleus.

Images



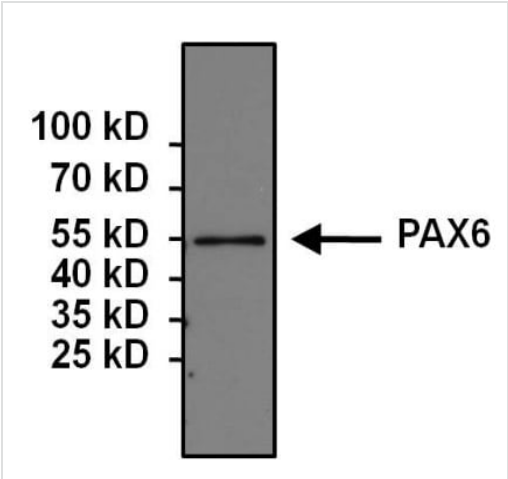
Immunocytochemistry/ Immunofluorescence - Anti-PAX6 antibody (ab5790)

Immunofluorescent analysis of PAX6 (green) in All-Trans-Retinoic Acid (ATRA) treated (10 µM for 24 hours) NCCIT cells. Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% BSA for 15 minutes at room temperature. Cells were probed with a PAX6 polyclonal antibody(ab5790) at a dilution of 1:50 for at least 1 hour at room temperature and incubated with DyLight 488 goat-anti-rabbit IgG secondary antibody at a dilution of 1:400 for 30 minutes at room temperature. F-Actin (red) was stained with DyLight 554 Phalloidin and nuclei (blue) were stained with Hoechst 33342 dye. Images were taken at 20X magnification.



Western blot - Anti-PAX6 antibody (ab5790)

Western blot analysis of PAX6 was performed by loading 50ug of various Human, mouse and non-human primate whole cell lysates per well onto a 4-20% Tris-HCl polyacrylamide gel. Proteins were transferred to a PVDF membrane and blocked with 5% BSA/TBST for at least 1 hour. The membrane was probed with a PAX6 polyclonal antibody (ab5790) at a dilution of 1:1000 overnight at 4°C on a rocking platform then washed in TBS-0.1%Tween 20 and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:20000 for at least one hour. Chemiluminescent detection was performed.



Immunoprecipitation - Anti-PAX6 antibody (ab5790)

Immunoprecipitation of PAX6 was performed on 293T cells. Antigen: antibody complexes were formed by incubating 500 µg whole cell lysate with 5 µg of PAX6 polyclonal antibody (ab5790) overnight on a rocking platform at 4°C. The immune complexes were captured on 50 µl Protein A/G Agarose, washed extensively and eluted with 5X Buffer. Samples were resolved on a 4-20% Tris-HCl polyacrylamide gel then transferred to a PVDF membraneand blocked with 5% BSA/TBS-0.1%Tween for at least 1 hour. The membrane was probed with a PAX6 monoclonal antibody at a dilution of 1:1000 overnight rotating at 4°C then washed in TBST and probed with detection reagent at a dilution of 1:1000 for at least one hour. Chemiluminescent detection was performed.

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