SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-6 (PAX6): sc-81649



BACKGROUND

Pax genes contain paired domains with strong homology to genes in *Drosophila* which are involved in programming early development. Lesions in the Pax-6 gene accounts for most cases of aniridia, a congenital malformation of the eye, chiefly characterized by iris hypoplasia, which can cause blindness. Pax-6 is involved in other anterior segment malformations besides aniridia, such as Peters' anomaly, a major error in the embryonic development of the eye with corneal clouding with variable iridolenticulocorneal adhesions. The Pax-6 gene encodes a transcriptional regulator that recognizes target genes through its paired-type DNA-binding domain. The paired domain is composed of two distinct DNA-binding subdomains, the amino-terminal subdomain and the carboxy-terminal subdomain, which bind respective consensus DNA sequences. The human Pax-6 gene produces two alternatively spliced isoforms that have the distinct structure of the paired domain.

CHROMOSOMAL LOCATION

Genetic locus: PAX6 (human) mapping to 11p13; Pax6 (mouse) mapping to 2 E3.

SOURCE

Pax-6 (PAX6) is a mouse monoclonal antibody raised against amino acids 1-223 of Pax-6 of chicken origin.

PRODUCT

Each vial contains 200 μg lgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Pax-6 (PAX6) is available conjugated to agarose (sc-81649 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81649 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81649 PE), fluorescein (sc-81649 FITC), Alexa Fluor[®] 488 (sc-81649 AF488), Alexa Fluor[®] 546 (sc-81649 AF546), Alexa Fluor[®] 594 (sc-81649 AF594) or Alexa Fluor[®] 647 (sc-81649 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-81649 AF680) or Alexa Fluor[®] 790 (sc-81649 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Pax-6 (PAX6) is recommended for detection of Pax-6 of mouse, rat, human and avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Pax-6 siRNA (h): sc-36195, Pax-6 siRNA (m): sc-36196, Pax-6 siRNA (r): sc-270113, Pax-6 shRNA Plasmid (h): sc-36195-SH, Pax-6 shRNA Plasmid (m): sc-36196-SH, Pax-6 shRNA Plasmid (r): sc-270113-SH, Pax-6 shRNA (h) Lentiviral Particles: sc-36195-V, Pax-6 shRNA (m) Lentiviral Particles: sc-36196-V and Pax-6 shRNA (r) Lentiviral Particles: sc-270113-V.

Molecular Weight of Pax-6: 47 kDa.

Positive Controls: Pax-6 (h): 293T Lysate: sc-110018.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA





Pax-6 (PAX6): sc-81649. Western blot analysis of Pax-6 expression in non-transfected: sc-117752 (A) and human Pax-6 transfected: sc-110018 (B) 293T whole cell lysates.

Pax-6 (PAX6): sc-81649. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of islets of Langerhans at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

- Desponts, C. and Ding, S. 2010. Using small molecules to improve generation of induced pluripotent stem cells from somatic cells. Methods Mol. Biol. 636: 207-218.
- Elizalde, C., et al. 2011. Distinct roles for Wnt-4 and Wnt-11 during retinoic acid-induced neuronal differentiation. Stem Cells 29: 141-153.
- Kim, C.H., et al. 2012. Transcriptional activity of paired homeobox Pax-6 is enhanced by histone acetyltransferase Tip60 during mouse retina development. Biochem. Biophys. Res. Commun. 424: 427-432.
- Grandy, R.A., et al. 2015. Genome-wide studies reveal that H3K4me3 modification in bivalent genes is dynamically regulated during the pluripotent cell cycle and stabilized upon differentiation. Mol. Cell. Biol. 36: 615-627.
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- Kim, C.H., et al. 2017. Histone deacetylase 1 (HDAC1) regulates retinal development through a Pax-6-dependent pathway. Biochem. Biophys. Res. Commun. 482: 735-741.
- van Diepen, L., et al. 2018. A patient-specific induced pluripotent stem cell model for West syndrome caused by ST3GAL3 deficiency. Eur. J. Hum. Genet. 26: 1773-1783.
- 8. Linkous, A., et al. 2019. Modeling patient-derived glioblastoma with cerebral organoids. Cell Rep. 26: 3203-3211.e5.
- Salaris, F., et al. 2019. 3D bioprinted human cortical neural constructs derived from induced pluripotent stem cells. J. Clin. Med. 8: 1595.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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