SANTA CRUZ BIOTECHNOLOGY, INC.

Chx10 (E-12): sc-365519

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Chx10, for ceh-10 homeodomain containing homolog, is also known as RET1 and HOX10 and is closely related to the homeodomain of the homeobox gene ceh-10 from the nematode *Caenorhabditis elegans.* Chx10 is an essential component in the network of genes required for the development of the mammalian eye, with profound effects on retinal progenitor proliferation and bipolar cell specification or differentiation. Chx10 is expressed in the early retinal neuroepithelium, is restricted to bipolar cells and is maintained at a low level in bipolar cells of the mature retina. Human CHX10 is also expressed in the inner nuclear layer of the mature retina. Expression patterns implicate critical roles in the formation of the neuroretina and in the development and maintenance of the inner nuclear layer. Chx10 is expressed at high levels in uncommitted retinal progenitor cells and mature bipolar cells.

REFERENCES

1. Liu, I.S., et al. 1994. Developmental expression of a novel murine homeobox gene (Chx10): evidence for roles in determination of the neuroretina and inner nuclear layer. Neuron 13: 377-393.
2. Svendsen, P.C., et al. 1995. The *C. elegans* neuronally expressed homeobox gene ceh-10 is closely related to genes expressed in the vertebrate eye. Development 121: 1253-1262.

CHROMOSOMAL LOCATION

Genetic locus: VSX2 (human) mapping to 14q24.3; Vsx2 (mouse) mapping to 12 D1.

SOURCE

Chx10 (E-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 37-64 near the N-terminus of Chx10 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-365519 X, 200 µg/0.1 ml.

Chx10 (E-12) is available conjugated to agarose (sc-365519 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365519 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365519 PE), fluorescein (sc-365519 FITC), Alexa Fluor® 488 (sc-365519 AF488), Alexa Fluor® 546 (sc-365519 AF546), Alexa Fluor® 594 (sc-365519 AF594) or Alexa Fluor® 647 (sc-365519 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365519 AF680) or Alexa Fluor® 790 (sc-365519 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365519 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Chx10 (E-12) is recommended for detection of Chx10 of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Chx10 (E-12) is also recommended for detection of Chx10 in additional species, including equine, canine and porcine.

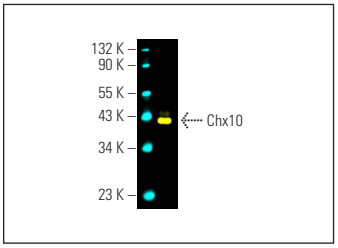
Suitable for use as control antibody for Chx10 siRNA (h): sc-38647, Chx10 siRNA (m): sc-142339, Chx10 shRNA Plasmid (h): sc-38647-SH, Chx10 shRNA Plasmid (m): sc-142339-SH, Chx10 shRNA (h) Lentiviral Particles: sc-38647-V and Chx10 shRNA (m) Lentiviral Particles: sc-142339-V.

Chx10 (E-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

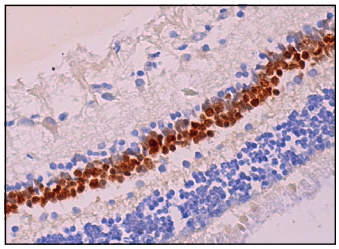
Molecular Weight of Chx10: 39 kDa.

Positive Controls: human brain extract: sc-364375 or mouse eye extract: sc-364241.

DATA



Chx10 (E-12) Alexa Fluor® 488: sc-365519 AF488. Direct fluorescent western blot analysis of Chx10 expression in human brain tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 647: sc-516791.



Chx10 (E-12): sc-365519. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal eye tissue showing nuclear staining of inner cell layer of the retina.

SELECT PRODUCT CITATIONS

1. Wang, W., et al. 2014. Swine cone and rod precursors arise sequentially and display sequential and transient integration and differentiation potential following transplantation. Invest. Ophthalmol. Vis. Sci. 55: 301-309.
2. Lim, S., et al. 2021. mTORC1-induced retinal progenitor cell overproliferation leads to accelerated mitotic aging and degeneration of descendent Müller glia. Elife 10: e70079.
3. Yamasaki, S., et al. 2022. A genetic modification that reduces ON-bipolar cells in hESC-derived retinas enhances functional integration after transplantation. iScience 25: 103657.

RESEARCH USE

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