SANTA CRUZ BIOTECHNOLOGY, INC.

CRX (Q17): sc-81958

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The cone-rod homeobox-containing gene (CRX) encodes a transcription factor that coordinates the expression of several photoreceptor genes in the developing retina, including opsin and rhodopsin. Specifically, CRX binds the OTX motif (TAATCC/A) upstream from photoreceptor genes. The CRX gene is also expressed in the pinealocytes of the pineal gland and may regulate pineal circadian activity by controlling the expression of melatonin synthesis genes. Furthermore, CRX$^-$ mice exhibit disruption of circadian rhythms. The human CRX gene maps to chromosome 19q13.33 within the region of the cone-rod dystrophy-2 locus (CORD2). Mutations in the CRX gene are implicated in the visual pathologies of CORD, Leber congenital amaurosis (LCA) and retinitis pigmentosa (RP). All characterized CRX gene mutations produce disease in heterozygotes although there is no known correlation between the pathologic phenotype and genetic mutation. Missense mutations of the CRX gene affect the homeobox domain, whereas frameshift mutations affect the OTX domain.

REFERENCES

1. Furukawa, T., et al. 1997. CRX, a novel OTX-like homeobox gene, shows photoreceptor-specific expression and regulates photoreceptor differentiation. Cell 91: 531-541.
2. Furukawa, T., et al. 1999. Retinopathy and attenuated circadian entrainment in CRX-deficient mice. Nat. Genet. 23: 466-470.
3. Bernard, M., et al. 2001. Transcriptional regulation of the chicken hydroxyindole-O-methyltransferase gene by the cone-rod homeobox-containing protein. J. Neurochem. 79: 248-257.
4. Rivolta, C., et al. 2001. Dominant Leber congenital amaurosis, cone-rod degeneration and retinitis pigmentosa caused by mutant versions of the transcription factor CRX. Hum. Mutat. 18: 488-498.
5. Rivolta, C., et al. 2001. Novel frameshift mutations in CRX associated with Leber congenital amaurosis. Hum. Mutat. 18: 550-551.
6. Furukawa, A., et al. 2002. The mouse Crx 5'-upstream transgene sequence directs cell-specific and developmentally regulated expression in retinal photoreceptor cells. J. Neurosci. 22: 1640-1647.

CHROMOSOMAL LOCATION

Genetic locus: CRX (human) mapping to 19q13.33; Crx (mouse) mapping to 7 A2.

SOURCE

CRX (Q17) is a mouse monoclonal antibody raised against recombinant CRX of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

CRX (Q17) is recommended for detection of CRX 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CRX siRNA (h): sc-38649, CRX siRNA (m): sc-38650, CRX shRNA Plasmid (h): sc-38649-SH, CRX shRNA Plasmid (m): sc-38650-SH, CRX shRNA (h) Lentiviral Particles: sc-38649-V and CRX shRNA (m) Lentiviral Particles: sc-38650-V.

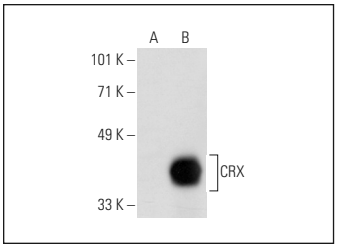
Molecular Weight of CRX: 32 kDa.

Positive Controls: CRX (h): 293 Lysate: sc-111144 or IMR-32 cell lysate: sc-2409.

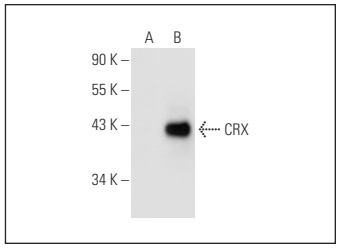
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



CRX (Q17): sc-81958. Western blot analysis of CRX expression in non-transfected: sc-110760 (**A**) and human CRX transfected: sc-111144 (**B**) 293 whole cell lysates.



CRX (Q17): sc-81958. Western blot analysis of CRX expression in non-transfected: sc-117752 (**A**) and human CRX transfected: sc-170540 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Santagata, S., et al. 2009. CRX is a diagnostic marker of retinal and pineal lineage tumors. PLoS ONE 4: e7932.
2. Hassall, M.M., et al. 2020. Analysis of early cone dysfunction in an *in vivo* model of rod-cone dystrophy. Int. J. Mol. Sci. 21: 6055.
3. Masurkar, S.A., et al. 2021. Downregulation of CRX, a Group 3-specific oncogenic transcription factor, inhibits TGF-β/activin signaling in medulloblastoma cells. Biochem Biophys. Res. Commun. 568: 76-82.

RESEARCH USE

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