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SANTA CRUZ BIOTECHNOLOGY, INC.

CRX (h3): 293T Lysate: sc-170540

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 inretinal photoreceptor cells. J. Neurosci. 22: 1640-1647.
7. Gamse, J.T., et al. 2002. OTX5 regulates genes that show circadian expression in the zebrafish pineal complex. Nat. Genet. 30: 117-121.

CHROMOSOMAL LOCATION

Genetic locus: CRX (human) mapping to 19q13.33.

PRODUCT

CRX (h3): 293T Lysate represents a lysate of human CRX transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

CRX (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive CRX antibodies. Recommended use: 10-20 µl per lane.

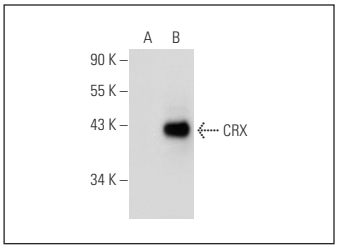
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

CRX (Q17): sc-81958 is recommended as a positive control antibody for Western Blot analysis of enhanced human CRX expression in CRX transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.