

# CRALBP (D-10): sc-48354

## BACKGROUND

11-*cis*-retinal, the universal chromophore of the vertebrate retina, is coupled to opsins in both rod and cone photoreceptor cells and is photoisomerized to all-*trans*-retinal by light. This conversion is inhibited when 11-*cis*-retinal is in a complex with cellular retinaldehyde-binding protein (CRALBP). CRALBP may play a role in the vertebrate visual process as a substrate-routing protein, influencing the enzymatic partitioning of 11-*cis*-retinal at a key branch point in the visual cycle. Human CRALBP maps to chromosome 15q26.1 and encodes a 316 amino acid protein. CRALBP is not expressed in photoreceptors and is abundant in the retinal pigment epithelium (RPE) and Muller cells of the neuroretina, where it carries 11-*cis*-retinol and 11-*cis*-retinaldehyde. Mutations in the human CRALBP gene cause retinal pathology and delayed dark adaptation. CRALBP knockout mice have a delayed response in rhodopsin regeneration, 11-*cis*-retinal production and dark adaptation after illumination.

## REFERENCES

- Crabb, J.W., et al. 1988. Cloning of the cDNAs encoding the cellular retinaldehyde-binding protein from bovine and human retina and comparison of the protein structures. *J. Biol. Chem.* 263: 18688-18692.
- Sparkes, R.S., et al. 1992. Assignment of the gene (RLBP1) for cellular retinaldehyde-binding protein (CRALBP) to human chromosome 15q26 and mouse chromosome 7. *Genomics* 12: 58-62.
- Intres, R., et al. 1994. Molecular cloning and structural analysis of the human gene encoding cellular retinaldehyde-binding protein. *J. Biol. Chem.* 269: 25411-25418.
- McBee, J.K., et al. 2001. Isomerization of 11-*cis*-retinoids to all-*trans*-retinoids *in vitro* and *in vivo*. *J. Biol. Chem.* 276: 48483-48493.
- McBee, J.K., et al. 2001. Visual cycle impairment in cellular retinaldehyde binding protein (CRALBP) knockout mice results in delayed dark adaptation. *Neuron* 29: 739-748.
- Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 180090. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: RLBP1 (human) mapping to 15q26.1; Rlbp1 (mouse) mapping to 7 D3.

## SOURCE

CRALBP (D-10) is a mouse monoclonal antibody raised against amino acids 1-100 of CRALBP of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> 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

CRALBP (D-10) is recommended for detection of CRALBP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CRALBP siRNA (h): sc-40428, CRALBP siRNA (m): sc-40429, CRALBP shRNA Plasmid (h): sc-40428-SH, CRALBP shRNA Plasmid (m): sc-40429-SH, CRALBP shRNA (h) Lentiviral Particles: sc-40428-V and CRALBP shRNA (m) Lentiviral Particles: sc-40429-V.

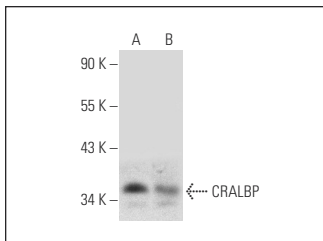
Molecular Weight of CRALBP: 36 kDa.

Positive Controls: rat eye extract: sc-364805, Y79 cell lysate: sc-2240 or ARPE-19 whole cell lysate: sc-364357.

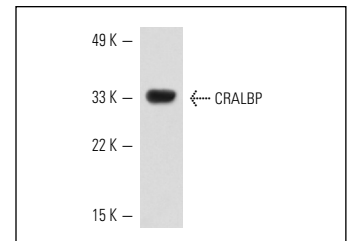
## RECOMMENDED SUPPORT REAGENTS

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, TBS Blotting A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



CRALBP (D-10): sc-48354. Western blot analysis of CRALBP expression in Y79 (A) and ARPE-19 (B) whole cell lysates.



CRALBP (D-10): sc-48354. Western blot analysis of CRALBP expression in rat eye tissue extract.

## SELECT PRODUCT CITATIONS

- Huang, C., et al. 2012. Combination of retinal pigment epithelium cell-conditioned medium and photoreceptor outer segments stimulate mesenchymal stem cell differentiation toward a functional retinal pigment epithelium cell phenotype. *J. Cell. Biochem.* 113: 590-598.

## RESEARCH USE

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