

# CRALBP (B2): sc-59487

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CRALBP (B2) is a mouse monoclonal antibody raised against full length 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.

CRALBP (B2) is available conjugated to agarose (sc-59487 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59487 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59487 PE), fluorescein (sc-59487 FITC), Alexa Fluor<sup>®</sup> 488 (sc-59487 AF488), Alexa Fluor<sup>®</sup> 546 (sc-59487 AF546), Alexa Fluor<sup>®</sup> 594 (sc-59487 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-59487 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-59487 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-59487 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

CRALBP (B2) is recommended for detection of CRALBP of mouse, rat, human and bovine 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).

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.

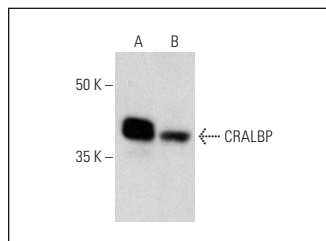
Molecular Weight of CRALBP: 36 kDa.

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

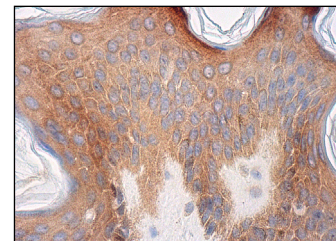
## STORAGE

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

## DATA



CRALBP (B2): sc-59487. Western blot analysis of CRALBP expression in rat eye tissue extract (A) and ARPE-19 whole cell lysate (B).



CRALBP (B2): sc-59487. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of epidermal cells.

## SELECT PRODUCT CITATIONS

1. Kurumada, S., et al. 2007. Stage-specific association of apolipoprotein A-I and E in developing mouse retina. *Invest. Ophthalmol. Vis. Sci.* 48: 1815-1823.
2. Krishnan, G. and Chatterjee, N. 2012. Endocannabinoids alleviate proinflammatory conditions by modulating innate immune response in muller glia during inflammation. *Glia* 60: 1629-1645.
3. Swoboda, J.G., et al. 2013. Small molecule mediated proliferation of primary retinal pigment epithelial cells. *ACS Chem. Biol.* 8: 1407-1411.
4. Li, Y., et al. 2014. Topoisomerase IIβ is required for proper retinal development and survival of postmitotic cells. *Biol. Open* 3: 172-184.
5. Matteucci, A., et al. 2014. Effects of neonatal corticosterone and environmental enrichment on retinal ERK1/2 and CREB phosphorylation in adult mice. *Exp. Eye Res.* 128: 109-113.
6. Krishnan, G. and Chatterjee, N. 2014. Endocannabinoids affect innate immunity of Muller glia during HIV-1 Tat cytotoxicity. *Mol. Cell. Neurosci.* 59: 10-23.
7. Choi, V.W., et al. 2015. AAV-mediated RLBP1 gene therapy improves the rate of dark adaptation in Rlbp1 knockout mice. *Mol. Ther. Methods Clin. Dev.* 2: 15022.
8. Xie, J., et al. 2017. Olfactory ensheathing cells inhibit gliosis in retinal degeneration by downregulation of the Müller cell notch signaling pathway. *Cell Transplant.* 26: 967-982.
9. Chen, D.D., et al. 2023. The downregulation of HSP90-controlled CRALBP expression is associated with age-related vision attenuation. *FASEB J.* 37: e22832.

## RESEARCH USE

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

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA