SANTA CRUZ BIOTECHNOLOGY, INC.

# CRBP I (N-17): sc-17145

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*The Power to Question*

## BACKGROUND

The cellular retinol-binding proteins (CRBP I, II, III and IV) belong to a superfamily of small cytoplasmic proteins which interact with hydrophobic ligands. Vitamin A, a molecule essential for cell growth and differentiation, embryonic development and vision, is transported into the cell by the CRBPs in its alcoholic form, called retinol. Both CRBP I and II are composed of 10 antiparallel β-strands, which form a β-barrel that contains the retinol molecule, and 2 α-helices, which cover the open ends of the barrel. CRBP I mediates the cellular uptake of retinol, solubilizes and detoxifies it for further transport within the cytoplasm, and presents it to the appropriate enzymes to biosynthesize retinoic acid, an active form of retinol or retinyl esters, which are stored. CRBP I is expressed in human ovary, adrenal and pituitary glands and testis, and its expression is modulated by TGFβ. CRBP II is expressed solely in the small intestine and mediates the absorption of retinoids and carotenoids to biosynthesize retinyl esters. CRBP III and CRBP IV are cytoplasmic proteins that, like CRBP I and CRBP II, form β-barrel structures and participate in the intracellular transport of retinol.

## REFERENCES


1. Ong, D.E. and Page, D.L. 1986. Quantitation of cellular retinol-binding protein in human organs. Am. J. Clin. Nutr. 44: 425-430.
2. Cowan, S.W., et al. 1993. Crystallographic studies on a family of cellular lipophilic transport proteins. Refinement of P2 Myelin protein and the structure determination and refinement of cellular retinol-binding protein in complex with all-*trans*-retinol. J. Mol. Biol. 230: 1225-1246.
3. Winter, N.S., et al. 1993. Crystal structures of holo- and apo-cellular retinol-binding protein II. J. Mol. Biol. 230: 1247-1259.
4. Okuno, M., et al. 1993. Cellular retinoid-binding proteins. Nippon Rinsho 51: 879-885.
5. Takase, S., et al. 2000. Regulation of vitamin A metabolism-related gene expression. Br. J. Nutr. 84: S217-S221.


## CHROMOSOMAL LOCATION

Genetic locus: RBP1 (human) mapping to 3q23; Rbp1 (mouse) mapping to 9 E3.3.

## SOURCE

CRBP I (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CRBP I of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17145 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

CRBP I (N-17) is recommended for detection of CRBP I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

CRBP I (N-17) is also recommended for detection of CRBP I in additional species, including equine, bovine, porcine and avian.

Suitable for use as control antibody for CRBP I siRNA (h): sc-43699, CRBP I siRNA (m): sc-60043, CRBP I shRNA Plasmid (h): sc-43699-SH, CRBP I shRNA Plasmid (m): sc-60043-SH, CRBP I shRNA (h) Lentiviral Particles: sc-43699-V and CRBP I shRNA (m) Lentiviral Particles: sc-60043-V.

Molecular Weight of CRBP I: 15 kDa.

Positive Controls: rat eye extract: sc-364805, mouse eye extract: sc-364241 or SCC-4 whole cell lysate: sc-364363.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS


1. Jeronimo, C., et al. 2004. Aberrant cellular retinol binding protein 1 (CRBP1) gene expression and promoter methylation in prostate cancer. J. Clin. Pathol. 57: 872-876.
2. Bandapalli, O.R., et al. 2006. Global analysis of host tissue gene expression in the invasive front of colorectal liver metastases. Int. J. Cancer 118: 74-89.
3. Liu, C.J., et al. 2006. Array-comparative genomic hybridization to detect genomewide changes in microdissected primary and metastatic oral squamous cell carcinomas. Mol. Carcinog. 45: 721-731.
4. Maura, L.V., et al. 2008. Retinoid expression (RARβ and CRBP1) in non-small-cell lung carcinoma. Medicina 68: 205-212.


## RESEARCH USE

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