SANTA CRUZ BIOTECHNOLOGY, INC.

CRBP I (F3): sc-53989

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The cellular retinol-binding proteins (CRBP I and II) 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 ten antiparallel β-strands, which form a β-barrel that contains the retinol molecule, and two 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 bio-synthesize 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.
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3. Winter, N.S., Bratt, J.M. and Banaszak, L.J. 1993. Crystal structures of holo- and apo-cellular retinol-binding protein II. J. Mol. Biol. 230: 1247-1259.
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6. Xu, G., Bochaton-Piallat, M.L., Andreutti, D., Low, R.B., Gabbiani, G. and Neuville, P. 2001. Regulation of α-smooth muscle Actin and CRBP-1 expression by retinoic acid and TGFβ in cultured fibroblasts. J. Cell. Physiol. 187: 315-325.

CHROMOSOMAL LOCATION

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

SOURCE

CRBP I (F3) is a mouse monoclonal antibody raised against oxidized CRBP I of bovine origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CRBP I (F3) is recommended for detection of CRBP I 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

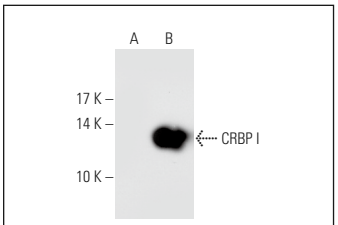
Molecular Weight of CRBP I: 15 kDa.

Positive Controls: CRBP I (m): 293T Lysate: sc-119442, rat liver extract: sc-2395 or SCC-4 whole cell lysate: sc-364363.

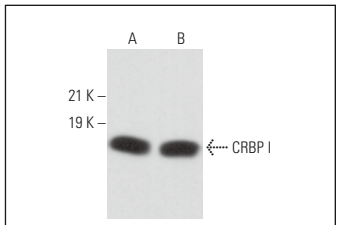
RECOMMENDED SUPPORT REAGENTS

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). 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



CRBP I (F3): sc-53989. Western blot analysis of CRBP I expression in non-transfected: sc-117752 (**A**) and mouse CRBP I transfected: sc-119442 (**B**) 293T whole cell lysates.



CRBP I (F3): sc-53989. Western blot analysis of CRBP I expression in rat liver tissue extract (**A**) and SCC-4 whole cell lysate (**B**).

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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