SANTA CRUZ BIOTECHNOLOGY, INC.

CRBP I (B-8): sc-271208

SANTA CRUZ BIOTECHNOLOGY

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 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 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.

CHROMOSOMAL LOCATION

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

SOURCE

CRBP I (B-8) is a mouse monoclonal antibody raised against amino acids 1-135 representing full length CRBP I of human 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.

CRBP I (B-8) is available conjugated to agarose (sc-271208 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271208 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271208 PE), fluorescein (sc-271208 FITC), Alexa Fluor® 488 (sc-271208 AF488), Alexa Fluor® 546 (sc-271208 AF546), Alexa Fluor® 594 (sc-271208 AF594) or Alexa Fluor® 647 (sc-271208 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271208 AF680) or Alexa Fluor® 790 (sc-271208 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

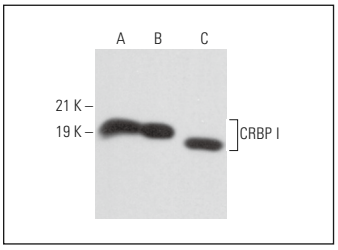
CRBP I (B-8) is recommended for detection of CRBP I of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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); partially cross reactive with other CRBP family members.

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.

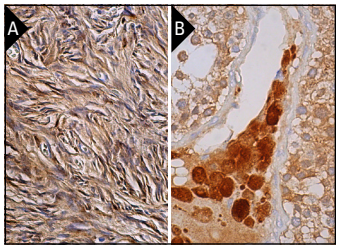
Molecular Weight of CRBP I: 15 kDa.

Positive Controls: SCC-4 whole cell lysate: sc-364363, rat liver extract: sc-2395 or Y79 cell lysate: sc-2240.

DATA



CRBP I (B-8): sc-271208. Western blot analysis of CRBP I expression in SCC-4 (**A**) and Y79 (**B**) whole cell lysates and rat liver tissue extract (**C**).



CRBP I (B-8): sc-271208. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing cytoplasmic staining of ovarian stromal cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Trasino, S.E., et al. 2015. Vitamin A deficiency causes hyperglycemia and loss of pancreatic β-cell mass. J. Biol. Chem. 290: 1456-1473.
2. Zhang, X., et al. 2017. Serum amyloid A induces a vascular smooth muscle cell phenotype switch through the p38 MAPK signaling pathway. Biomed Res. Int. 2017: 4941379.
3. Melis, M., et al. 2019. Effects of AM80 compared to AC261066 in a high fat diet mouse model of liver disease. PLoS ONE 14: e0211071.
4. Lee, E.J., et al. 2020. Hepatic stellate cell-specific knockout of transcriptional intermediary factor 1γ aggravates liver fibrosis. J. Exp. Med. 217: e20190402.
5. Imoesi, P.I., et al. 2023. Control by the brain of vitamin A homeostasis. iScience 26: 107373.

RESEARCH USE

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