

# CRBP III (A-12): sc-390258

## 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  $\beta$ -strands, which form a  $\beta$ -barrel that contains the retinol molecule, and two  $\alpha$ -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 TGF $\beta$ . 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  $\beta$ -barrel structures and participate in the intracellular transport of retinol.

## REFERENCES

- Ong, D.E. and Page, D.L. 1986. Quantitation of cellular retinol-binding protein in human organs. *Am. J. Clin. Nutr.* 44: 425-430.
- 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.
- Winter, N.S., et al. 1993. Crystal structures of holo- and apo-cellular retinol-binding protein II. *J. Mol. Biol.* 230: 1247-1259.
- Okuno, M., et al. 1993. Cellular retinoid-binding proteins. *Nippon Rinsho* 51: 879-885.
- Takase, S., et al. 2000. Regulation of vitamin A metabolism-related gene expression. *Br. J. Nutr.* 84: S217-S221.

## CHROMOSOMAL LOCATION

Genetic locus: RBP5 (human) mapping to 12p13.31.

## SOURCE

CRBP III (A-12) is a mouse monoclonal antibody raised against amino acids 1-135 representing full length CRBP III of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CRBP III (A-12) is available conjugated to agarose (sc-390258 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390258 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390258 PE), fluorescein (sc-390258 FITC), Alexa Fluor<sup>®</sup> 488 (sc-390258 AF488), Alexa Fluor<sup>®</sup> 546 (sc-390258 AF546), Alexa Fluor<sup>®</sup> 594 (sc-390258 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-390258 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-390258 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-390258 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

CRBP III (A-12) is recommended for detection of CRBP III of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 CRBP III siRNA (h): sc-60440, CRBP III shRNA Plasmid (h): sc-60440-SH and CRBP III shRNA (h) Lentiviral Particles: sc-60440-V.

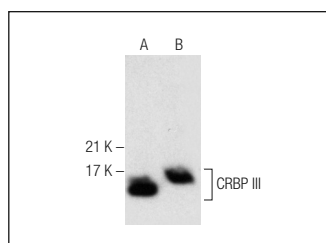
Molecular Weight of CRBP III: 16 kDa.

Positive Controls: human kidney extract: sc-363764, rat liver extract: sc-2395 or human liver extract: sc-363766.

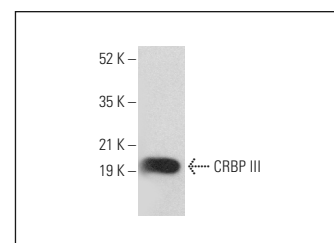
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



CRBP III (A-12): sc-390258. Western blot analysis of CRBP III expression in human kidney (A) and human liver (B) tissue extracts.



CRBP III (A-12): sc-390258. Western blot analysis of CRBP III expression in rat liver tissue extract.

## 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](http://www.scbt.com) for detailed protocols and support products.

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