



CRBP III (h): 293T Lysate: sc-159786

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 TGF β . 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., Newcomer, M.E. and Jones, T.A. 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., 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.
4. Okuno, M., Numaguchi, S., Moriwaki, H. and Muto, Y. 1993. Cellular retinoid-binding proteins. *Nippon Rinsho* 51: 879-885.
5. Takase, S., Suruga, K. and Goda, T. 2000. Regulation of vitamin A metabolism-related gene expression. *Br. J. Nutr.* 84: S217-S221.
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 I expression by retinoic acid and TGF β in cultured fibroblasts. *J. Cell. Physiol.* 187: 315-325.
7. Folli, C., Calderone, V., Ottonello, S., Bolchi, A., Zanotti, G., Stoppini, M. and Berni, R. 2001. Identification, retinoid binding and x-ray analysis of a human retinol-binding protein. *Proc. Natl. Acad. Sci. USA* 98: 3710-3715.

CHROMOSOMAL LOCATION

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

PRODUCT

CRBP III (h): 293T Lysate represents a lysate of human CRBP III transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

CRBP III (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CRBP III antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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