SANTA CRUZ BIOTECHNOLOGY, INC.

# RBP (20F9): sc-69795

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Retinol (vitamin A) is transported in the blood bound to its carrier protein, retinol-binding protein (RBP), also designated plasma retinol-binding protein (PRBP) or RBP4. A member of the lipocalin family, RBP conveys retinol from stores in the liver to peripheral tissues. In plasma, RBP binds transthyretin (TTR, formerly called prealbumin) to prevent glomerular filtration of low molecular weight RBP in the kidneys. The stability of this complex holds diagnostic importance because the molar ratio of RBP:TTR provides an indirect way to indicate marginal vitamin A deficiency. Vitamin A deficiency blocks the secretion of RBP resulting in defective delivery and supply to epidermal cells. Originally identified solely as a transporter protein, recent studies correlating increased levels of RBP expression in adipose tissue with Insulin resistance have generated research into the possible roles the protein may play in the pathogenesis of type 2 diabetes and obesity.

## REFERENCES


1. van Bennekum, A.M., et al. 1993. Retinol uptake from retinol-binding protein (RBP) by liver parenchymal cells *in vitro* does not specifically depend on its binding to RBP. Biochemistry 32: 1727-1733.
2. Zanotti, G., et al. 1993. The interaction of N-ethyl retinamide with plasma retinol-binding protein (RBP) and the crystal structure of the retinoid-RBP complex at 1.9-A resolution. J. Biol. Chem. 268: 24873-24879.
3. Yamamoto, Y., et al. 1997. Interactions of transthyretin (TTR) and retinol-binding protein (RBP) in the uptake of retinol by primary rat hepatocytes. Exp. Cell Res. 234: 373-378.
4. Naylor, H.M., et al. 1999. The structure of human retinol-binding protein (RBP) with its carrier protein transthyretin reveals an interaction with the carboxy-terminus of RBP. Biochemistry 38: 2647-2653.
5. Quadro, L., et al. 2002. Muscle expression of human retinol-binding protein (RBP). Suppression of the visual defect of RBP knockout mice. J. Biol. Chem. 277: 30191-30197.
6. Rosales, F.J., et al. 2002. Determination of a cut-off value for the molar ratio of retinol-binding protein to transthyretin (RBP:TTR) in Bangladeshi patients with low hepatic vitamin A stores. J. Nutr. 132: 3687-3692.
7. Monaco, H.L. 2002. Three-dimensional structure of the transthyretin-retinol-binding protein complex. Clin. Chem. Lab. Med. 40: 1229-1236.


## CHROMOSOMAL LOCATION

Genetic locus: RBP4 (human) mapping to 10q23.33; Rbp4 (mouse) mapping to 19 C3.

## SOURCE

RBP (20F9) is a mouse monoclonal antibody raised against purified RBP of human origin.

## PRODUCT

Each vial contains $IgG_1$ in 100 µl of PBS with < 0.1% sodium azide, 0.1% gelatin, 1% glycerol and < 0.1% stabilizer protein.

## APPLICATIONS

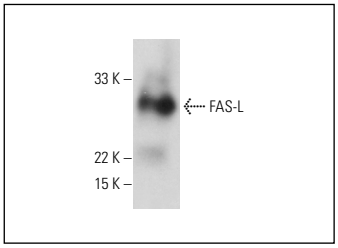
RBP (20F9) is recommended for detection of RBP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for RBP siRNA (h): sc-44071, RBP siRNA (m): sc-44578, RBP shRNA Plasmid (h): sc-44071-SH, RBP shRNA Plasmid (m): sc-44578-SH, RBP shRNA (h) Lentiviral Particles: sc-44071-V and RBP shRNA (m) Lentiviral Particles: sc-44578-V.

Molecular Weight of RBP: 25 kDa.

Positive Controls: MES-SA/Dx5 cell lysate: sc-2284, human plasma extract: sc-364374 or Hep G2 cell lysate: sc-2227.

## DATA




Western blot analysis of FAS-L expression in HL-60 whole cell lysate immunoprecipitated with FAS-L (2.1): sc-33716 and detected with FAS-L (N-20): sc-834.

## SELECT PRODUCT CITATIONS


1. Farjo, K.M., et al. 2012. Retinol-binding protein 4 induces inflammation in human endothelial cells by an NADPH oxidase- and nuclear factor κ B-dependent and retinol-independent mechanism. Mol. Cell. Biol. 32: 5103-5115.
2. Ray, S., et al. 2012. Proteomic investigation of *falciparum* and *vivax* malaria for identification of surrogate protein markers. PLoS ONE 7: e41751.
3. Lorkova, L., et al. 2012. Decreased concentrations of retinol-binding protein 4 in sera of epithelial ovarian cancer patients: a potential biomarker identified by proteomics. Oncol. Rep. 27: 318-324.
4. Masood, A., et al. 2021. Identification of protein changes in the urine of hypothyroid patients treated with thyroxine using proteomics approach. ACS Omega 6: 2367-2378.
5. Alasmari, F., et al. 2021. Serum proteomic analysis of cannabis use disorder in male patients. Molecules 26: 5311.


## 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.