

Product Information



Serum Retinol Binding Protein 4 (human recombinant)

Catalog No. 10007818 • Lot. No. XXXXX

Synonyms:	RBP4; sRBP4
Source:	Recombinant his-tagged protein purified from <i>E. coli</i>
M_r:	~21 kDa/subunit
Purity:	≥95%
Stability:	≥6 months at -80°C
Supplied as:	A solution in 50 mM sodium phosphate, pH 8.2, containing 20% glycerol and 100 mM sodium chloride
Protein concentration:	XX mg/ml

Laboratory Procedures

Human serum retinol binding protein 4 (sRBP4) binds to one equivalent of vitamin A and is one of the major retinol carriers found in the blood of mammals.^{1,2} Human sRBP4 is a monomeric 21 kDa β -sheet-rich protein that contains three disulfide bonds and belongs to the lipocalin protein family.³ In plasma, sRBP4 typically forms a 1:1 complex with the 55 kDa tetrameric protein transthyretin (TTR) which prevents RBP from being removed from the plasma by glomerular filtration.⁴ Recent studies have shown that sRBP4 is an adipocyte-derived “signal” that may contribute to the pathogenesis of type 2 diabetes.^{5,6} Elevation of sRBP4 causes systemic insulin resistance, whereas reduced serum concentrations of sRBP4 improves insulin action.^{5,7,8}

Cayman’s human recombinant sRBP4 contains a C-terminal hexahistidine tag. The purified protein was characterized for its retinol binding activity. sRBP4 is stable at -20°C for six months. For long term storage aliquot the protein and store at -80°C.



1. MW
2. 0.5 µg
3. 1.0 µg
4. 2.0 µg

References

1. Noy, N. Retinoid-binding proteins: Mediators of retinoid action. *Biochem J.* **348**, 481-495 (2000).
2. Xie, Y., Lashuel, H.A., Miroy, G.J., *et al.* Recombinant human retinol-binding protein refolding, native disulfide formation, and characterization. *Protein Expression and Purification* **14**, 31-37 (1998).
3. Cowan, S.W., Newcomer, M.E., and Jones, T.A. Crystallographic refinement of human serum retinol binding protein at 2Å resolution. *Proteins: Structure, Function, and Genetics* **8**, 44-61 (1990).
4. Sivaprasadarao, A. and Findlay, J.B.C. Expression of functional human retinol-binding protein in *Escherichia coli* using a secretion vector. *Biochem J.* **296**, 209-215 (1993).
5. Yang, Q., Graham, T.E., Mody, N., *et al.* Serum retinol binding protein 4 contributes to insulin resistance in obesity and type 2 diabetes. *Nature* **436**, 356-362 (2005).
6. Muoio, D.M. and Newgard, C.B. A is for adipokine. *Nature News and Views* **436**, 337-338 (2005).
7. Graham, T.E., Yang, Q., Blüher, M., *et al.* Retinol-binding protein 4 and insulin resistance in lean, obese, and diabetic subjects. *N. Engl. J. Med.* **354(24)**, 2552-2563 (2006).
8. Polonsky, K.S. Retinol-binding protein 4, insulin resistance, and type 2 diabetes. *N. Engl. J. Med.* **354(24)**, 2596-2598 (2006).

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Insulin (rat) EIA Kit - Cat. No. 589501 • Resistin (murine) EIA Kit - Cat. No. 10005726 • ChREBP Transcription Factor Assay Kit - Cat. No. 10006909
• Adiponectin (human) EIA Kit (HS) - Cat. No. 10007619 • SREBP-2 Transcription Factor Assay Kit - Cat. No. 10007819

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