# PRODUCT INFORMATION

## Serum Retinol Binding Protein 4 (human recombinant)

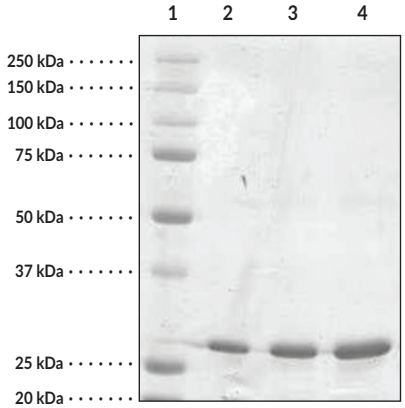
*Item No. 10007818*

### Overview and Properties

**Synonyms:** RBP4, sRBP4
**Source:** Recombinant His-tagged protein purified from *E. coli*
**Molecular Weight:** ~21 kDa
**Storage:** -80°C (as supplied)
**Stability:** ≥6 months
**Purity:** ≥95% estimated by SDS-PAGE
**Supplied in:** 50 mM sodium phosphate, pH 8.2, with 100 mM sodium chloride and 20% glycerol
**Protein Concentration:** ***batch specific*** mg/ml

*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Image




**Lane 1:** MW Markers
**Lane 2:** 0.5 µg
**Lane 3:** 1.0 µg
**Lane 4:** 2.0 µg



CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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## Description

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.

## References


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3. Cowan, S.W., Newcomer, M.E., and Jones, T.A. Crystallographic refinement of human serum retinol binding protein at 2Å resolution. *Proteins* **8(1)**, 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**(Pt. 1)**, 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(7049)**, 356-362 (2005).
6. Muoio, D.M. and Newgard, C.B. Metabolism: A is for adipokine. *Nature* **436(7049)**, 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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