

# Canine RBP4 Protein (His Tag)

Catalog Number: 70006-D08H



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

RBP4

### Protein Construction:

A DNA sequence encoding the canine RBP4 (F1PQI4) (Met1-Leu201) was expressed with a C-terminal polyhistidine tag.

**Source:** Canine

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 94 % as determined by SDS-PAGE

### Bio Activity:

**Measured by its ability to bind alltrans retinoic acid. The binding of retinoic acid results in the quenching of Trp fluorescence in RBP4. The 50% binding concentration (BC50) is >1  $\mu$ M**

### Endotoxin:

< 1.0 EU per  $\mu$ g of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Glu 19

### Molecular Mass:

The recombinant canine RBP4 comprises 194 amino acids and has a predicted molecular mass of 22.4 kDa. The apparent molecular mass of the protein is approximately 23 kDa in SDS-PAGE under reducing conditions due to glycosylation.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

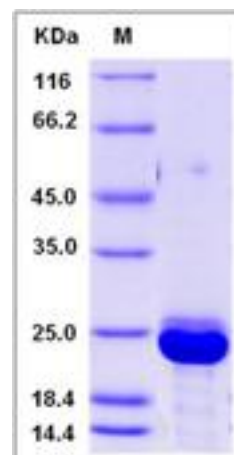
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Retinol-binding protein 4 (RBP4) is the specific carrier for retinol (also known as vitamin A), and is responsible for the conversion of unstable and insoluble retinol in aqueous solution into stable and soluble complex in plasma through their tight interaction. As a member of the lipocalin superfamily, RBP4 containing a  $\beta$ -barrel structure with a well-defined cavity is secreted from the liver, and in turn delivers retinol from the liver stores to the peripheral tissues. In plasma, the RBP4-retinol complex interacts with transthyretin (TTR), and this binding is crucial for preventing RBP4 excretion through the kidney glomeruli. RBP4 expressed from an ectopic source efficiently delivers retinol to the eyes, and its deficiency affects night vision largely. Recently, RBP4 as an adipokine, is found to be expressed in adipose tissue and correlated with obesity, insulin resistance (IR) and type 2 diabetes (T2DM).

## References

1. Yang Q, *et al.* (2005) Serum retinol binding protein 4 contributes to insulin resistance in obesity and type 2 diabetes. *Nature*. 436(7049): 356-62.
2. Choi SH, *et al.* (2008) High plasma retinol binding protein-4 and low plasma adiponectin concentrations are associated with severity of glucose intolerance in women with previous gestational diabetes mellitus. *J Clin Endocrinol Metab*. 93(8): 3142-8.
3. Tepper BJ, *et al.* (2010) Serum retinol-binding protein 4 (RBP4) and retinol in a cohort of borderline obese women with and without gestational diabetes. *Clin Biochem*. 43(3): 320-3.

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