

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects mouse RBP4/Retinol-Binding Protein 4 in direct ELISA and Western Blot. In Western blots, detects human RBP4/Retinol-Binding Protein 4.
Source	Monoclonal Rat IgG _{2A} Clone # 423619
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse RBP4/Retinol-Binding Protein 4 Met1-Leu201 Accession # NP_035385
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.05-2 µg/mL	See Below
Flow Cytometry	2.5 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

Western Blot

Detection of Mouse RBP4/Retinol-Binding Protein 4 by Western Blot.
Western blot shows lysates of mouse serum. PVDF Membrane was probed with 2 µg/mL of Rat Anti-Human/Mouse RBP4/Retinol-Binding Protein 4 Monoclonal Antibody (Catalog # MAB34761) followed by HRP-conjugated Anti-Rat IgG Secondary Antibody (Catalog # HAF005). A specific band was detected for RBP4/Retinol-Binding Protein 4 at approximately 22 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Western Blot

Detection of Human RBP4/Retinol-Binding Protein 4 by Western Blot.
Western blot shows lysates of human liver tissue and human serum. PVDF membrane was probed with 0.05 µg/mL of Rat Anti-Human/Mouse RBP4/Retinol-Binding Protein 4 Monoclonal Antibody (Catalog # MAB34761) followed by HRP-conjugated Anti-Rat IgG Secondary Antibody (Catalog # HAF005). A specific band was detected for RBP4/Retinol-Binding Protein 4 at approximately 22 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry

Detection of RBP4/Retinol-Binding Protein 4 in Mouse Splenocytes by Flow Cytometry.
Mouse splenocytes were stained with Rat Anti-Human/Mouse RBP4/Retinol-Binding Protein 4 Monoclonal Antibody (Catalog # MAB34761, filled histogram) or isotype control antibody (Catalog # MAB006, open histogram), followed by Allophycocyanin-conjugated Anti-Rat IgG F(ab')₂ Secondary Antibody (Catalog # F0113).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Retinol (also known as vitamin A) is unstable and insoluble in the aqueous solution. However, retinol becomes quite stable and soluble in plasma due to its tight interaction with Retinol-binding Protein 4 (RBP4), also known as Plasma Retinol-binding Protein (1-3). A prototypic member of the lipocalin superfamily, RBP4 has a β -barrel structure with a well-defined cavity. It is secreted from the liver, a process requiring the availability of retinol. RBP4 delivers retinol from the liver to the peripheral tissues. In plasma, the RBP4-retinol complex interacts with transthyretin (TTR), also known as thyroxine-binding protein and prealbumin. The retinol-RBP4-TTR complex prevents the loss of RBP4 by filtration through the kidney and increases the stability of the retinol-RBP4 complex. Defects in RBP4 cause retinol-binding protein deficiency, which affects night vision. Serum RBP4 levels are elevated in insulin-resistant mice and humans with obesity and type 2 diabetes, implying that RBP4, an adipocyte-derived signal, may be a biomarker and a drug target for the two diseases. The amino acid sequence of mouse RBP4 is 99%, 86%, 83% and 75% identical to that of rat, human/chimpanzee, dog and chicken.

References:

1. Zanotti, G. and R. Berni (2004) *Vitamins and Hormones* **69**:271.
2. Newcomer, M.E. and D.E. Ong (2000) *Biochim. Biophys. Acta* **1482**:57.
3. Yang, Q. *et al.* (2005) *Nature* **436**:356.