

DATASHEET
Version 20181206**RBP4, His, Human****Cat. No.:** Z03378-50**Size:** 50.0 ug**Synonyms:** RBP4; Retinol-Binding Protein 4**Description:**

The properties of retinol binding protein is the transport carrier of vitamin A in the plasma. Human-retinol binding protein is a single-chain polypeptide with a molecular weight of approximately 21000 and one binding site for retinol and other forms of vitamin A. In addition, compounds related to retinol, such as retinal, retinoic acid, retinyl esters and geometric isomers of retinol and of retinal were evaluated for their ability to bind to this protein. In plasma, RBP4-retinol forms a complex with transthyretin (TTR), also known as thyroxine-binding protein and prealbumin. Defects in RBP4 cause retinol-binding protein deficiency, which affects night vision.

GenScript rhRBP4 with C-terminal Histidine tag has a molecular mass of 22 kDa analyzed by reducing SDS-PAGE and is obtained by chromatographic techniques at GenScript.

Amino Acid Sequence:

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00001 ERDCRVSSFR VKENFDKARF SGTWYAMAKK DPEGLFLQDN
00041 IVAEFSVDET GQMSATAKGR VRLNNWDVC ADMVGTFTDT
00081 EDPAKFKMKY WGVASFLQKG NDDHWIVDTD YDTYAVQYSC
00121 RLLNLDGTCA DSYSFVFSRD PNGLPPEAQK IVRQRQEELC
00161 LARQYRLIVH NGYCDGRSER NLLHHHHHH
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Source: HEK 293

Biological Activity: Measured by its ability to bind all-trans retinoic acid. The binding of retinoic acid results in the quenching of Trp fluorescence in RBP4. >1.0 μM all-trans retinoic acid is bound under the described conditions.

Assay Protocol:

1. Dilute rhRBP4 to 49 $\mu\text{g/mL}$ in Assay Buffer.
2. Make serial dilutions of retinoic acid in 95% ethanol at 100, 30, 10, 3 and 1 μM .
3. The formation of Protein/Retinol binding in microtubes:
 - 3.1. Mix 112.5 μL of 49 $\mu\text{g/mL}$ rhRBP4 and 12.5 μL of retinoic acid serial dilutions in microtubes.
 - 3.2. For a blank, mix 112.5 μL of 49 $\mu\text{g/mL}$ rhRBP4 and 12.5 μL of 95% ethanol in a microtube.
4. Incubate reaction tubes at room temperature for 30 minutes.
5. In a plate load 100 μL of the reaction mixtures and blank.
6. Read at excitation and emission wavelengths of 280 nm and 340 nm (top read), respectively, in end-point mode.
7. Calculate concentration at which 50% quenching of rhRBP4 is achieved by plotting raw RFUs vs. concentration of retinoic acid with 4 \square PL fitting. Use this value to estimate the concentration of retinoic acid fully bound by the rhRBP4.

Molecular Weight: 22kDa, observed by reducing SDS-PAGE.

Formulation: Lyophilized from a 0.2 μm filtered solution in 50mM Tris-HCl, 150mM NaCl, pH 7.5.

Reconstitution: Reconstituted in ddH₂O or PBS at 100 $\mu\text{g/mL}$.

Purity: > 97% as analyzed by reducing SDS-PAGE&RP-HPLC.

Endotoxin Level: <0.2 EU/ μg , determined by LAL method.

Storage: Lyophilized recombinant Human RBP4 remains stable up to 6 months at lower than -70°C from date of receipt. Upon reconstitution, Human RBP4 should be stable up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.