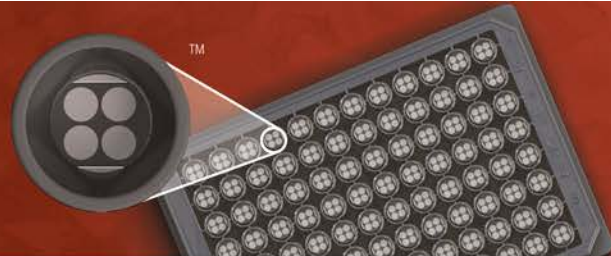


MSD[®] Human RBP4 Kit

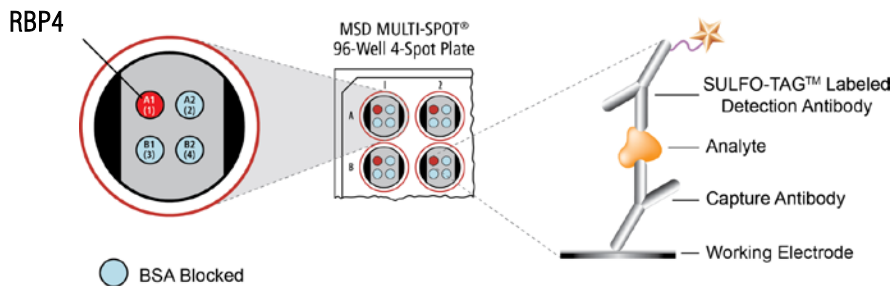
For quantitative determination in human urine



Alzheimer's Disease
BioProcess
Cardiac
Cell Signaling
Clinical Immunology
Cytokines
Growth Factors
Hypoxia
Immunogenicity
Inflammation
Metabolic
Oncology
Toxicology
Vascular

Catalog Numbers

Human RBP4 Kit	
Kit size	
1 plate	K151LXD-1
5 plates	K151LXD-2
25 plates	K151LXD-4



Retinol-binding protein 4 (RBP4) is a 21 kDa member of the lipocalin superfamily that transports Vitamin A (retinol) from liver stores to peripheral tissues via serum. The RBP4-retinol complex interacts with transthyretin (TTR) and prevents it from being filtered by the kidney.¹ The C-terminal, processed forms of RBP4 do not bind TTR; they are excreted into the urine and, during renal failure, they accumulate in the serum.²

RBP4 also acts as an adipokine and has been linked to the development of obesity, type 2 Diabetes (T2DM) and insulin resistance. The protein is secreted by adipocytes and hepatocytes and promotes hyperglycemia through downregulation of the glucose transporter type 4 (GLUT4).³ Glucose transport via Glut4 is the rate-limiting step for glucose use by muscle and adipose tissue. These processes are impaired in adipocytes of obese individuals and those with T2DM. Elevated RBP4 in urine and serum often mirrors the onset of cardiovascular complications and acute renal dysfunction associated with these diseases.^{2,3} Thus, measurement of urine, serum, or plasma RBP4 is a useful means for the understanding of various metabolic disorders.

The MSD Human RBP4 assay is available on 96-well 4-spot plates. This datasheet outlines the performance of the assay.

Ordering information

MSD Customer Service
Phone: 1-301-947-2085
Fax: 1-301-990-2776
Email: CustomerService@mesoscale.com

Assay Sensitivity

Average LLOD (pg/mL)	RBP4
	1.8

The lower limit of detection (LLOD) is a calculated concentration based on a signal 2.5 standard deviations above the background.

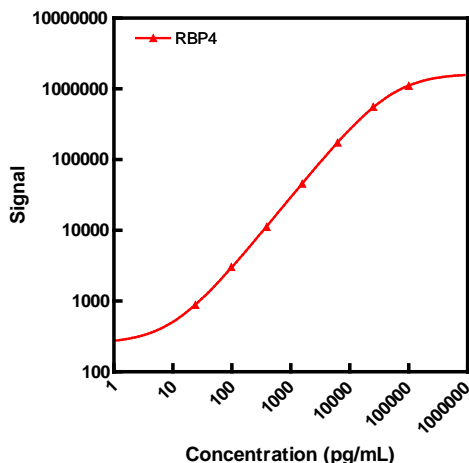
Company Address

MESO SCALE DISCOVERY[®]
division of
Meso Scale Diagnostics, LLC.
9238 Gaither Road
Gaithersburg, MD 20877 USA

www.mesoscale.com[®]

Typical Standard Curve

The following standard curve is an example of the wide dynamic range of the Human RBP4 assay.



Conc. (pg/mL)	RBP4	
	Average Signal	%CV
0	170	8.2
24	880	4.3
98	3038	2.5
391	11 163	5.9
1563	45 731	5.7
6250	174 029	5.6
25 000	557 596	6.2
100 000	1 103 480	2.4

For Research Use Only.
Not for use in diagnostic procedures.

MSD Toxicology Assays

MSD Advantage

- **Multiplexing:** Multiple analytes can be measured in one well without compromising speed or performance
- **Large dynamic range:** Linear range of up to five logs enables the measurement of native levels of biomarkers in normal and diseased samples without multiple dilutions
- **Minimal background:** The stimulation mechanism (electricity) is decoupled from the signal (light)
- **Simple protocols:** Only labels near the electrode surface are detected, enabling no-wash assays
- **Flexibility:** Labels are stable, non-radioactive, and conveniently conjugated to biological molecules
- **High sensitivity and precision:** Multiple excitation cycles of each label enhance light levels and improve sensitivity

For a complete list of products, please visit our website at www.mesoscale.com.

References

1. Blaner WS. Retinol-binding protein: the serum transport protein for vitamin A. *Endocr Rev* 1989 10:308–316.
2. Kirsztajn GM, Nishida SK, Silva MS, Ajzen H, Moura LA, Pereira AB. Urinary retinol-binding protein as a prognostic marker in glomerulopathies. *Nephron* 2002 Apr;90(4):424-31.
3. Yang Q, Graham TE, Mody N, Preitner F, Peroni OD, Zabolotny JM, Kotani K, Quadro L, Kahn BB. Serum retinol binding protein 4 contributes to insulin resistance in obesity and type 2 diabetes. *2005 Nature* 436:356–62.

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