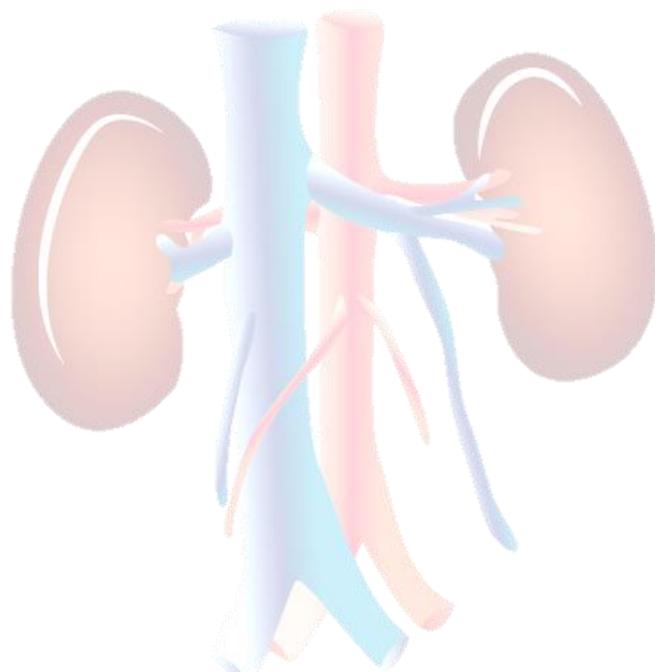


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Uromodulin

is a highly organ-specific protein that is only produced in the renal tubules of the kidneys. It is also known as Tamm-Horsfall protein that is the most abundant protein in urine.



Recently, it has been reported that uromodulin is present in trace amounts in blood and its concentration correlates with estimated glomerular filtration rate (eGFR) (Ref. 1, 2, 3). Uromodulin may be excreted in urine as an aggregate or a component of hyaline casts, depending on the nature of the urine and the state of the disease.

On the other hand, it is reported that **uromodulin in serum is present as a single substance, making it suitable for quantitative measurement.**

That is reason the why RenoProtect Inc. (R.Usui: CEO, M.D., ph.D., et al.) developed a kit for measuring uromodulin in blood. RenoProtect Inc. and IBL have collaboratively worked, and IBL has the exclusive right of distributing this ELISA kit worldwide.

ELISA Kit

Developed and Data Provided by RenoProtect

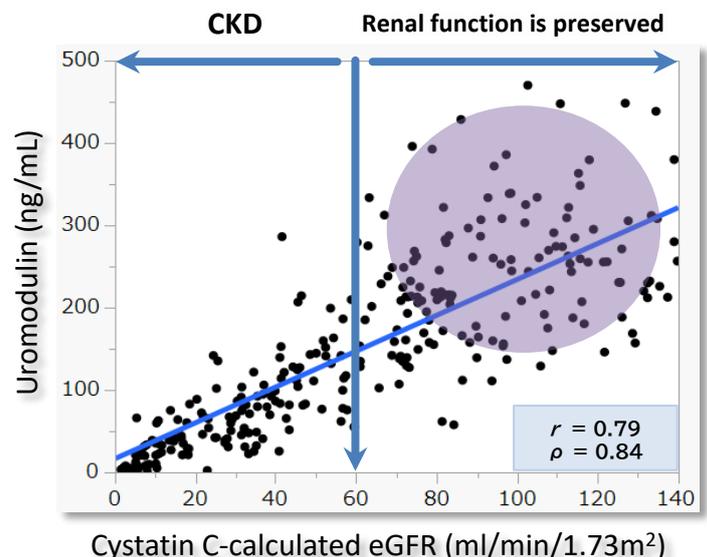
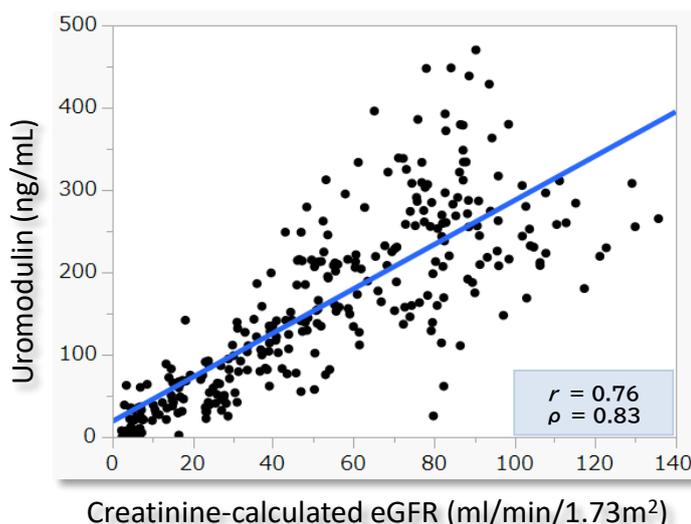


#27799-96Well Human Uromodulin ELISA Kit - IBL

- Sample : Serum, EDTA-plasma
- Measurement range : 0.14 ~ 9 ng/mL
- Sensitivity : 0.07 ng/mL
- Measurement time : about 2 hours

A New View of Renal Function as Indicated by Blood Uromodulin Levels

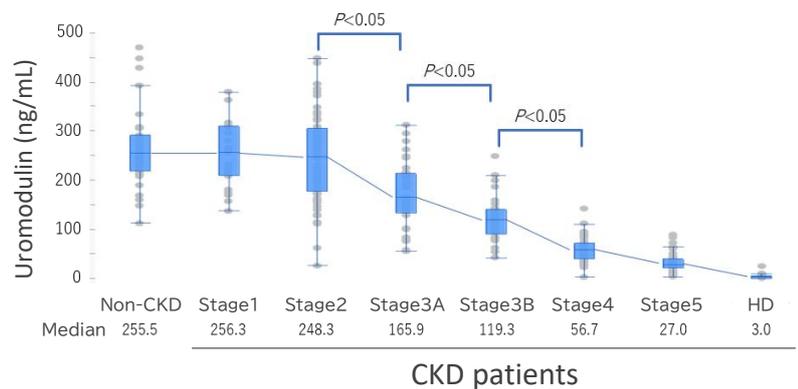
It has been reported by several research that **uromodulin level in blood is highly and positively correlated with eGFR** although it is not filtered by the renal glomeruli (Ref. 1, 2, 3). Range of uromodulin level in blood of individuals who have well maintained renal function is widely distributed between 200 and 400 ng/mL, however, it is considered that **the variation does not depend on the glomerular filtration rate, but is due to individual differences in the number of nephrons and functioning nephron mass** (Ref. 1).



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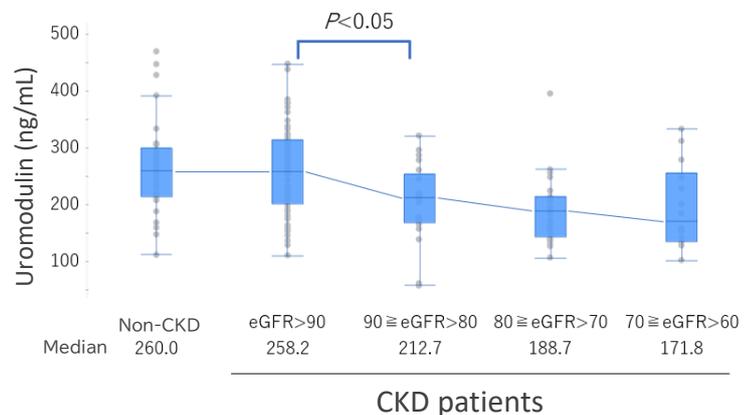
Blood Uromodulin Level and CKD Stages

It has been reported that analysis of blood uromodulin level by CKD stages according to creatinine-calculated eGFR confirmed that **blood uromodulin level significantly decreases in progression of the disease from stage 2 to 3 (eGFR <60 ml/min/1.73 m²)** (Ref. 1). Although there is no reference value for normal or abnormal blood uromodulin levels, it is suggested that if the level is under 150 ng/mL, it indicates the progression might be shifted beyond stage 3.



Blood Uromodulin Level and eGFR

It has been considered that cystatin C is a superior biomarker than creatinine for detecting early renal decline and evaluating healthy renal function. It has been also reported that analysis of blood uromodulin levels for every 10 reduction in eGFR from eGFR90 by cystatin C-calculated eGFR showed a significant decrease in uromodulin levels at the point below eGFR90(Ref. 1), suggesting that blood uromodulin may be sensitive enough to **detect slight declines in renal function.**



Potential Benefits of Blood Uromodulin Measurements

Blood uromodulin level is positively correlated with renal function, and the measured value might be considered as the remaining capacity of renal function. In other words, it is expected that **the changes of renal function might be possibly intuitively evaluated without calculating eGFR.** In addition, blood uromodulin level decreases in long term even in healthy individuals, reflecting gradually decline of renal function with aging. Periodic measurements of blood uromodulin level may predict and quantify residual capacity of renal function during the period. **It can be a good candidate for a preventive healthcare tool by monitoring kidney function before creatinine levels rise.**

Data Provided by RenoProtect

Reference

- [1. Usui R et al. Serum uromodulin is a novel renal function marker in the Japanese population. Clin Exp Nephrol. 2021;25:28-36.](#)
- [2. Fedak D et al. Pol Arch Med Wewn. Serum uromodulin concentrations correlate with glomerular filtration rate in patients with chronic kidney disease. 2016;126:995-1004.](#)
- [3. Scherberich JE. Serum uromodulin-a marker of kidney function and renal parenchymal integrity. Nephrol Dial Transplant. 2018;33:284-295.](#)

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