Urinary Titin N-fragment in disease prognosis of ALS

A group of researchers, headed by prof. Masahisa Katsuno, MD, PhD., at department of Neurology, Nagoya University Graduate School of Medicine (Nagoya, Japan) have conducted a study of amyotrophic lateral sclerosis (ALS) in which they enrolled 70 ALS patients and 43 healthy controls (HC) and assessed urinary Titin N-fragment, urinary neurotrophin receptor p75 extracellular domain (p75ECD), serum neurofilament light chain (NfL) and motor functions to evaluate their relevance as a marker of disease progression and prognosis of ALS.

As a result, they revealed that urinary Titin N-fragment levels normalised with Cr (titin/Cr) were significantly high in ALS patients (ALS, 27.2 pmol/mg/dL vs HC, 5.8 pmol/mg/dL; p<0.001) and associated with the scores of motor functions ALSFRS-R (r=−0.422, p<0.001) and patients with high Titin N-fragment showed poor prognosis.

In this report, urinary Titin N-fragment and p75ECD were associated with ALSFRS-R. These findings suggest that urinary Titin N-fragment, as well as urinary p75ECD, reflects ALS severity. Furthermore, a Cox proportional hazards model demonstrated that the high urinary level of urinary Titin N-fragment was a survival predictor in patients with ALS.

Multivariate analysis of prognostic factors showed that the urinary Titin N-fragment and serum NfL were independent factors for poor prognosis.

Conclusion

Thus it is concluded that urinary Titin N-fragment can be in combination with these markers useful to estimate disease progression and disease prognosis of ALS.

For measurement of urinary Titin N-fragment level, #27900 Human Titin N-Fragment (Urine) ELISA Kit – IBL is used in this report.

Titin (connectin) is a protein that consists of 34,350 amino-acid (3,816kDa) and specifically expresses in a cross-striated muscle. Titin has been known as the largest protein among of existing proteins in a living body. It has been researched in the field of muscular damages such as sports medicine, cardiac disease, NAFLD, sarcopenia and frailty etc.

## ELISA

**#27900 Human Titin N-Fragment (Urine) ELISA Kit – IBL**

* Sample types : Human
  * Measuring Samples : Urine
  * Measurement Range : 46.88 – 3,000 pmol/L

## Antibody

**#10423 Anti-Titin-N (53A1) Mouse IgG MoAb**

**#10425 Anti-Titin-N (144A2) Mouse IgG MoAb**

* Specificity : Human Titin N-Fragment specific
  * Application : ELISA

* ELISA is not available in US.