

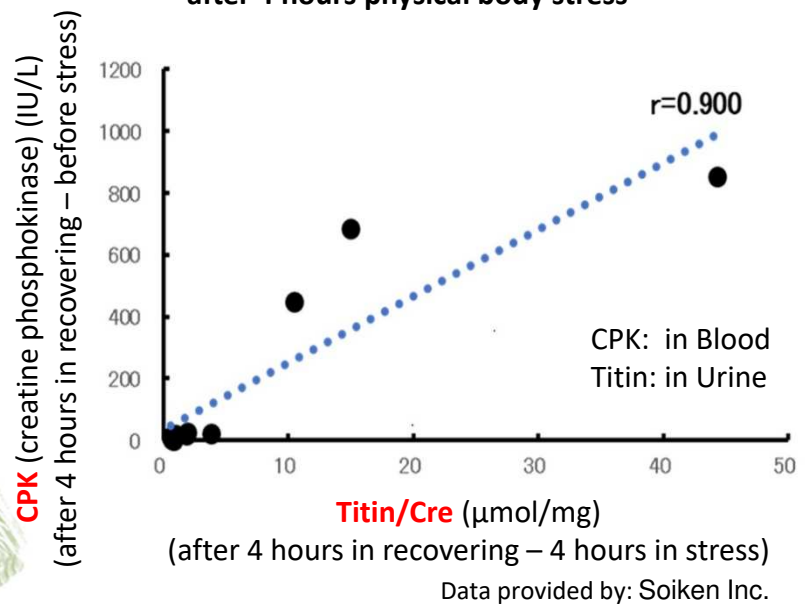
The product cannot be used for diagnostic nor any medical purpose.

## N-Titin

**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.



Comparison between CPK (Blood) and Titin-N (Urine) after 4 hours physical body stress



ELISA	Sample Type	Measurement Range (pmol/L)	Sensitivity (pmol/L)
<a href="#">#27900 Human Titin N-Fragment (Urine) ELISA Kit - IBL</a>	Human Urine	46.88 ~ 3000	27.91
<a href="#">#27902 Human Titin N-Fragment (Serum) ELISA Kit – IBL</a>	Human Serum	46.88 - 3,000	18.03
<a href="#">#27602 Mouse Titin N-Fragment (Urine) ELISA Kit – IBL</a>	Mouse Urine	75 - 4,800	22.8

Antibody	Application	Specificity	Size
<a href="#">#10423 Anti-Titin-N (53A1) Mouse IgG MoAb</a> <a href="#">#10425 Anti-Titin-N (144A2) Mouse IgG MoAb</a>	ELISA	Human Titin N-Fragment specific	100µg

Distributed by

# References

[#27900 Human Titin N-Fragment \(Urine\) ELISA Kit - IBL](#)

<b>Aging, Neurodegenerative</b> <small>Alzheimer's disease (AD) etc.</small>	<b>Kidney Diseases</b> <small>CKD, AKI, IgA Nephropathy (IgAN), Hypertension, etc.</small>	<b>Inflammatory Diseases</b> <small>Cancers, Arthritis, Hepatitis, etc.</small>	<b>Glucose / Lipid Metabolism</b> <small>Diabetes, Hyperlipidemia, Cardiovascular Events, etc.</small>
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No.	Field	Keywords	Published	Title
1	Heart disease	Cardiac surgery	2019	<a href="#">Urinary Titin Is Increased in Patients After Cardiac Surgery.</a> Tanihata J et al. <i>Front Cardiovasc Med.</i> 2019 Feb 8;6:7.PMID: 30800662
2	Heart disease	Dilated cardiomyopathy	2018	<a href="#">Usefulness of Urinary N-Terminal Fragment of Titin to Predict Mortality in Dilated Cardiomyopathy.</a> Yoshihisa A et al. <i>Am J Cardiol.</i> 2018 Feb 12. pii: S0002-9149(18)30192-9.PMID: 29523227
3	Liver disease	NAFLD	2019	<a href="#">Urinary Levels of Titin-N Fragment, a Skeletal Muscle Damage Marker, are Increased in Subjects with Nonalcoholic Fatty Liver Disease.</a> Oshida N et al. <i>Sci Rep.</i> 2019 Dec 20;9(1):19498.PMID: 31862937
4	Gastrointestinal disease	Malignant tumor	2020	<a href="#">Urinary titin N-terminal fragment concentration is an indicator of preoperative sarcopenia and nutritional status in patients with gastrointestinal tract and hepatobiliary pancreatic malignancies.</a> Miyoshi K et al. <i>Nutrition.</i> Nov-Dec 2020;79-80:110957.PMID:32866763
5	Emergency medical care	Rehabilitation & nutritional intervention	2021	<a href="#">Novel protocol combining physical and nutrition therapies, Intensive Goal-directed REhabilitation with Electrical muscle stimulation and Nutrition (IGREEN) care bundle.</a> Nakano H et al. <i>Crit Care.</i> 2021 Dec 4;25(1):415. PMID:34863251
6	Emergency medical care	Food intervention	2021	<a href="#">Urinary Titin N-Fragment Evaluation in a Randomized Controlled Trial of Beta-Hydroxy-Beta-Methylbutyrate for Acute Mild Trauma in Older Adults.</a> Nakano H et al. <i>Nutrients.</i> 2021 Mar 10;13(3):899. PMID: 33802012
7	Emergency medical care	Acute stroke	2020	<a href="#">Elevated Urinary Titin and its Associated Clinical Outcomes after Acute Stroke.</a> Ishihara M et al. <i>J Stroke Cerebrovasc Dis.</i> 2020 Dec 23;30(3):105561.PMID: 33360523
8	Emergency medical care	ICU-AW	2021	<a href="#">Urinary Titin N-Fragment as a Biomarker of Muscle Atrophy, Intensive Care Unit-Acquired Weakness, and Possible Application for Post-Intensive Care Syndrome.</a> Nakanishi N et al. <i>J Clin Med.</i> 2021 Feb 6;10(4):614.
9	Emergency medical care	ICU-AW	2020	<a href="#">Urine Titin N-fragment as a Biomarker of Muscle Injury for Critical Illness Myopathy.</a> Nakano H et al. <i>Am J Respir Crit Care Med.</i> 2020 Oct 8.PMID: 33030965
10	Emergency medical care	ICU-AW	2020	<a href="#">Urinary Titin Is a Novel Biomarker for Muscle Atrophy in Nonsurgical Critically Ill Patients: A Two-Center, Prospective Observational Study.</a> Nakanishi N et al. <i>Crit Care Med.</i> 2020 Sep;48(9):1327-1333.PMID: 32706557
11	Emergency medical care	ICU-AW	2020	<a href="#">Urine TITIN N-fragment as a Novel Biomarker for Critical Illness Myopathy: A Pilot Study.</a> Hidehiko N et al. <i>Crit Care.</i> 2020 Apr 28;24(1):177.PMID: 32345334
12	Sports medicine	Muscle damage after a match	2021	<a href="#">Urinary N-Terminal Fragment of Titin Reflects Muscle Damage After a Soccer Match in Male Collegiate Soccer Players.</a> Tanabe Y et al. <i>J Strength Cond Res.</i> 2021 Feb 1;35(2):360-365. PMID: 33337691
13	Sports medicine	Concentric and eccentric exercise	2020	<a href="#">Changes in Urinary Titin N-terminal Fragment Concentration after Concentric and Eccentric Exercise.</a> Yamaguchi S et al. <i>J Sports Sci Med.</i> 2020 Feb 24;19(1):121-129. eCollection 2020 Mar.PMID: 32132835
14	Sports medicine	Repeated bout effect	2019	<a href="#">Changes in urinary titin N-terminal fragments as a biomarker of exercise-induced muscle damage in the repeated bout effect.</a> Yamaguchi S et al. <i>J Sci Med Sport.</i> 2019 Dec 23. pii: S1440-2440(19)31246-0.PMID: 31928880
15	Neonatal care	Preterm birth	2021	<a href="#">Assessment of catabolic state in infants with the use of urinary titin N-fragment.</a> Fukushima S et al. <i>Pediatr Res.</i> 2021 Jul 17. PMID: 34274960