

## Anti-integrin $\alpha v \beta 6$ autoantibody measurement reagent

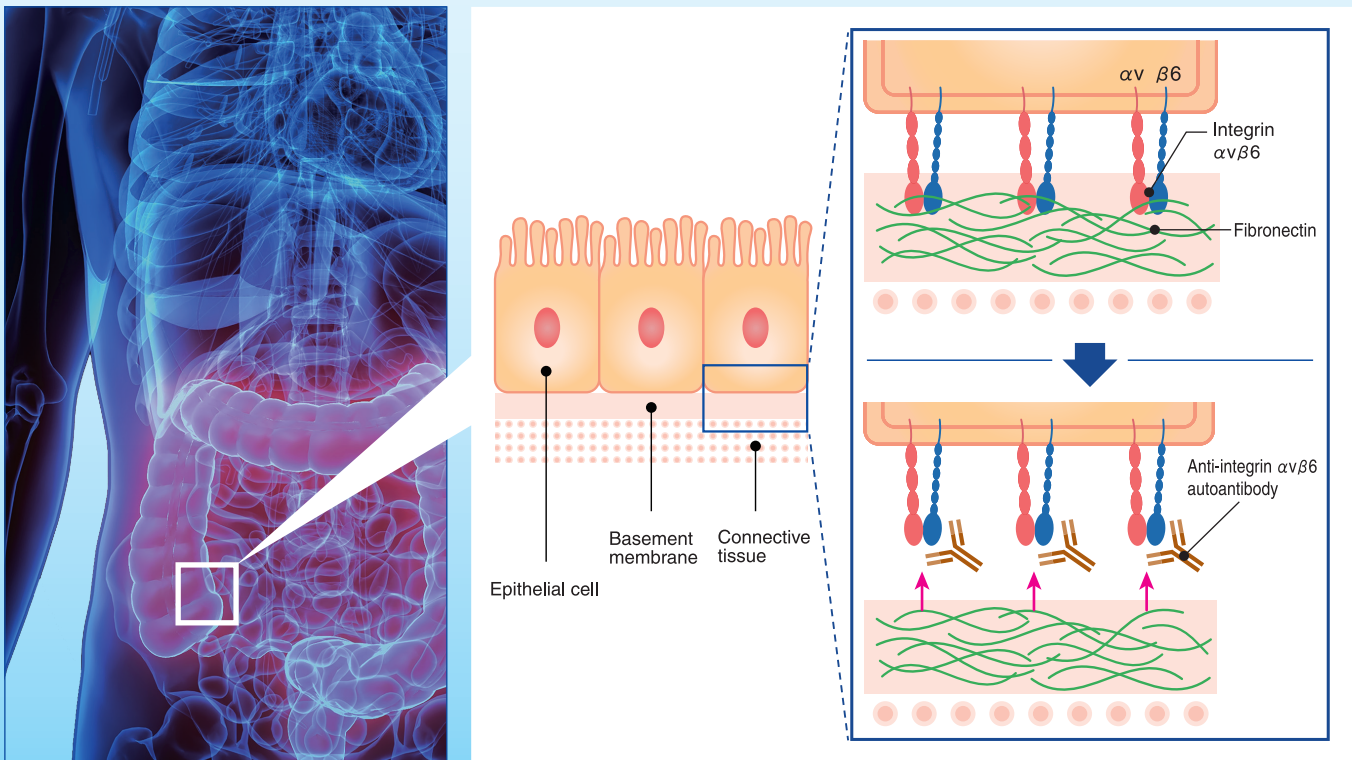
# Anti-Integrin $\alpha v \beta 6$ ELISA Kit

### Anti-integrin $\alpha v \beta 6$ autoantibody

Integrin  $\alpha v \beta 6$ , a heterodimeric protein expressed in epithelial cell, is a receptor for fibronectin, extracellular matrix protein<sup>1)</sup>. The recent publications reported that the autoantibody against integrin  $\alpha v \beta 6$  was frequently detected in ulcerative colitis patients<sup>2-4)</sup>. It has been reported that the anti-integrin  $\alpha v \beta 6$  autoantibody may induce epithelial cell damage as a potential pathogenic role of ulcerative colitis<sup>2)</sup>. (see the diagram below)

Anti-Integrin  $\alpha v \beta 6$  ELISA Kit is a kit to provide a highly specific detection of anti-integrin  $\alpha v \beta 6$  autoantibody in human serum.

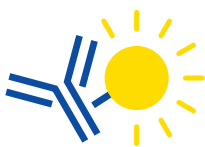
### Concept model: Anti-integrin $\alpha v \beta 6$ autoantibody in the large intestine



### Key features

Point 1

High sensitivity & specificity



Point 2

Pathophysiological role



Point 3

Easy detection from blood



## The latest research on anti-integrin $\alpha v \beta 6$ autoantibody in UC

In 2021, Kuwada *et al.* reported measuring anti-integrin  $\alpha v \beta 6$  autoantibody in serum using the ELISA method\*, and detecting it at higher frequency in ulcerative colitis (UC) than in control groups consisting of Crohn's disease (CD), other intestinal disease, and collagen disease patients, and healthy people. Taking the cut-off point to be mean + 3SD of the controls, the positive rate in the each group was as shown in the below table, and the sensitivity and specificity for UC were 92.0% and 94.8%, respectively. In addition, with 21 UC patients, when the relationships between anti-integrin  $\alpha v \beta 6$  autoantibody titer and two indices of UC disease activity, total Mayo score and partial Mayo score, were analyzed over time, the titer showed positive correlations with both indices (both  $P < 0.0001$ )<sup>2)</sup>.

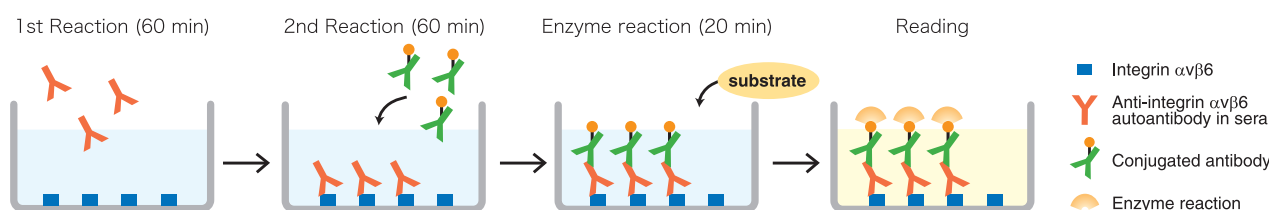
\*Kyoto University's in-house ELISA reagents were used.

### Positive rates for anti-integrin $\alpha v \beta 6$ autoantibody in different diseases

	Ulcerative colitis	Crohn's disease	Other intestinal diseases	Collagen diseases	Healthy volunteers
Positive rate	92.0% (103/112)	7.0% (5/71)	2.9% (1/35)	7.4% (2/27)	0.0% (0/22)

The elevation of anti-integrin  $\alpha v \beta 6$  antibodies was also reported in the studies conducted in the US and Europe<sup>3-5)</sup>. Anti-integrin  $\alpha v \beta 6$  antibodies were detected in pediatric UC as well<sup>6)</sup>. Interestingly, anti-integrin  $\alpha v \beta 6$  autoantibodies potentially exist in sera years before diagnosis of UC<sup>5)</sup>.

## Measurement principles



Measurement is by the ELISA method. Integrin  $\alpha v \beta 6$  is fixed to microplate wells in the solid phase. The sample is diluted, apportioned into the wells, and allowed to react for 60 minutes. After removing unreacted antibody by washing, enzyme-labeled antibody is apportioned to the wells, and allowed to react for 60 minutes. Then, after removing unreacted enzyme-labeled antibody by washing, the enzyme substrate is apportioned to the wells, and allowed to react for 20 minutes, after which the reaction is stopped, and the optical absorbance is measured. The concentration is calculated from the optical absorbance of the sample and the optical absorbance of a standard solution with which measurements are made at the same time as the sample.

## Product information

Code No.	Product	Size	Storage
5288	Anti-Integrin $\alpha v \beta 6$ ELISA Kit	96 wells	2 - 8 °C

## References

- 1) Koivisto L, *et al.* Integrin  $\alpha v \beta 6$ : Structure, function and role in health and diseases. *Int J Biochem Cell Biol.* 2018;99:186-96.
- 2) Kuwada T, *et al.* Identification of Anti-Integrin  $\alpha v \beta 6$  Autoantibody in Patients With Ulcerative Colitis. *Gastroenterology.* 2021;160(7):2383-94.e21.
- 3) Uzzan M, *et al.* Ulcerative colitis is characterized by a plasmablast-skewed humoral response associated with diseases activity. *Nat Med.* 2022;28(4):766-779.
- 4) Rydell N, *et al.* Measurement of Serum IgG Anti-Integrin  $\alpha v \beta 6$  Autoantibodies Is a Promising Tool in the Diagnosis of Ulcerative Colitis. *J Clin Med.* 2022;11(7):1881.
- 5) Livanos AE, *et al.* Anti-Integrin  $\alpha v \beta 6$  Autoantibodies Are a Novel Biomarker That Antedate Ulcerative Colitis. *Gastroenterology.* 2023;164(4):619-629.
- 6) Muramoto Y, *et al.* Anti-Integrin  $\alpha v \beta 6$  Antibody as a Diagnostic Marker for Pediatric Patients With Ulcerative Colitis. *Gastroenterology.* 2022;163(4):1094-1097.e14.

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2023.07 257107-25081003N

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