

## Anti-integrin $\alpha\text{v}\beta\text{6}$ antibody measurement reagents

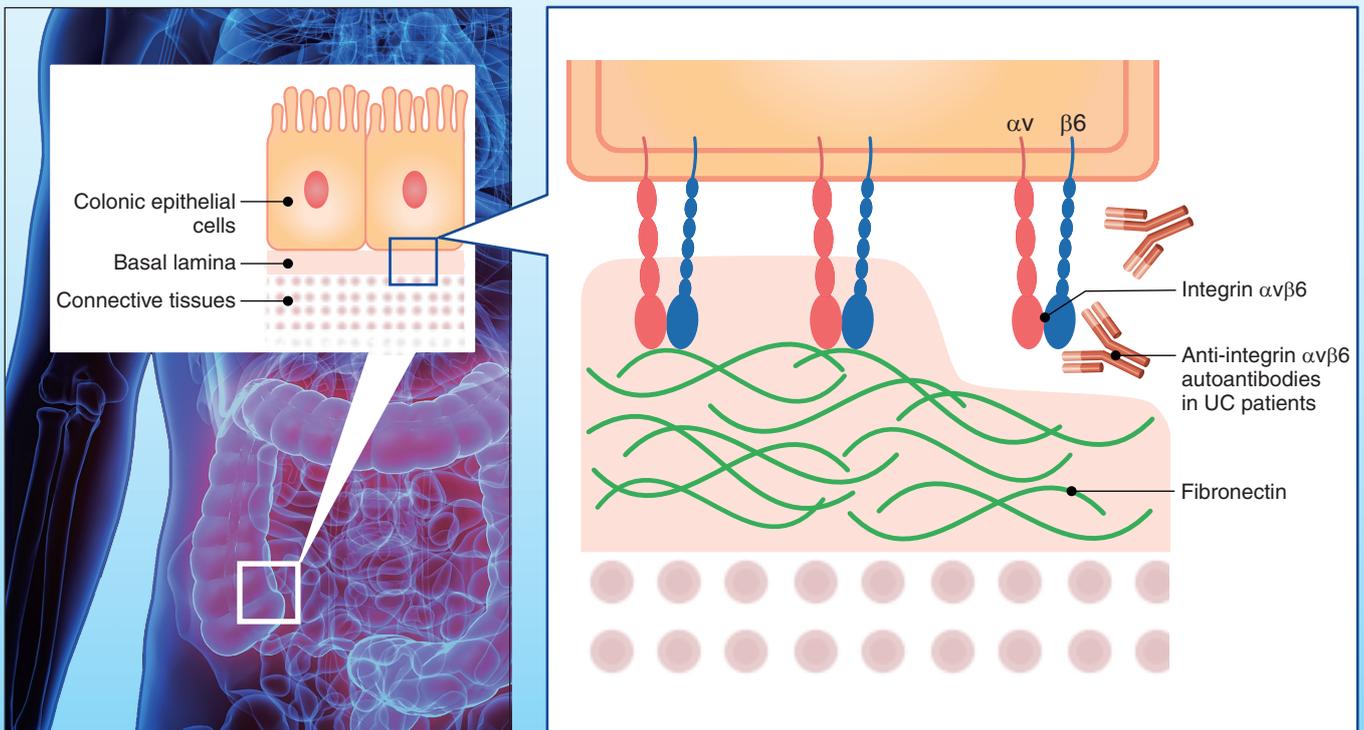
# Anti-Integrin $\alpha\text{v}\beta\text{6}$ ELISA Kit

## Anti-integrin $\alpha\text{v}\beta\text{6}$ antibody

The anti-integrin  $\alpha\text{v}\beta\text{6}$  antibody is an autoantibody against integrin  $\alpha\text{v}\beta\text{6}$ . Integrin is a cell-surface receptor that is responsible for cell adhesion by binding to the extracellular matrix, and it has a heterodimer structure, with two subunits,  $\alpha$  and  $\beta$ , that are non-covalently bound together. In mammals, there are 24 different types of integrin, among which integrin  $\alpha\text{v}\beta\text{6}$  is expressed exclusively by epithelial cells, and functions as a receptor of fibronectin and other extracellular matrix proteins. Integrin  $\alpha\text{v}\beta\text{6}$  expressed by the intestinal epithelium is associated with suppression of inflammation, and prevention of infection by pathogens and parasites<sup>1)</sup>.

Anti-integrin  $\alpha\text{v}\beta\text{6}$  antibody is frequently detected in ulcerative colitis (UC) patients<sup>2, 3)</sup>, and its antibody titer has been reported to be correlated with disease activity<sup>2)</sup>.

## Integrin $\alpha\text{v}\beta\text{6}$ and anti-integrin $\alpha\text{v}\beta\text{6}$ antibody in the large intestine



- This is the ELISA kit that measures anti-integrin  $\alpha\text{v}\beta\text{6}$  antibody in serum.
- Anti-integrin  $\alpha\text{v}\beta\text{6}$  antibody is frequently detected in UC patients.

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

In 2021, Kuwada *et al.* reported measuring anti-integrin  $\alpha v \beta 6$  antibody in serum using the ELISA method\*, and detecting it at higher frequency in UC patients 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  $\alpha v \beta 6$  antibody 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>.

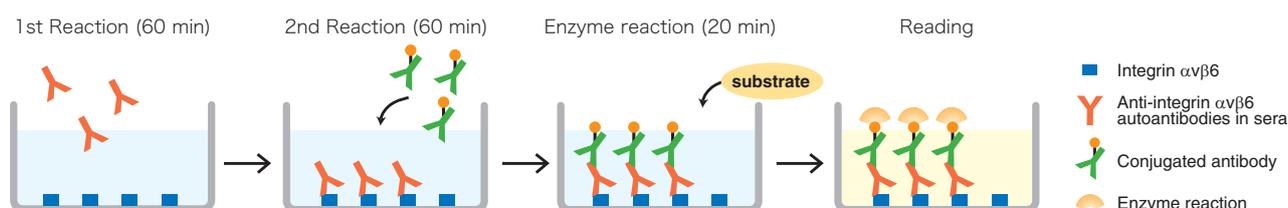
\*Kyoto University's in-house ELISA reagents were used.

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

	UC	CD	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)

High level expression of anti-integrin  $\alpha v \beta 6$  antibodies in UC patients was also reported in the study conducted in the US<sup>3)</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, Bi J, Häkkinen L, Larjava H. Integrin  $\alpha v \beta 6$ : Structure, function and role in health and disease. *Int J Biochem Cell Biol.* 2018;99:186-96.
- 2) Kuwada T, Shiokawa M, Kodama Y, Ota S, Kakiuchi N, Nannya Y, *et al.* Identification of an Anti-Integrin  $\alpha v \beta 6$  Autoantibody in Patients With Ulcerative Colitis. *Gastroenterology.* 2021;160(7):2383-94.e21.
- 3) Uzzan M, Martin JC, Mesin L, Livanos AE, Castro-Dopico T, Huang R, *et al.* Ulcerative colitis is characterized by a plasmablast-skewed humoral response associated with disease activity. *Nat Med.* 2022.

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