Antigen binding-avidity antibody titer assay
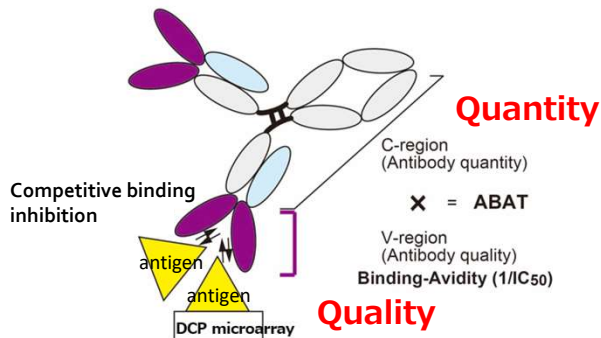
【Advantages of the Novel Inspection】

- Data predict oral food challenge (OFC) -positivity or -negativity in <u>individual patients</u>.
- Detection of the low binding-avidity IgE antibodies and OFC-negativity, providing future safe dietary intake doses in dietary life.
- Monitor individual oral immunotherapy efficacy over time.
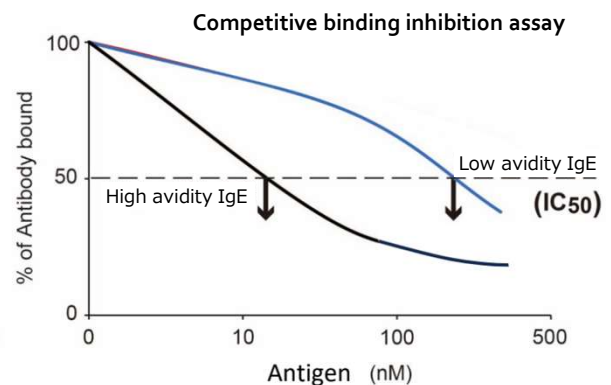
1. What is antigen binding-avidity antibody titer (ABAT) ?

ABAT (antigen binding-avidity antibody titer)

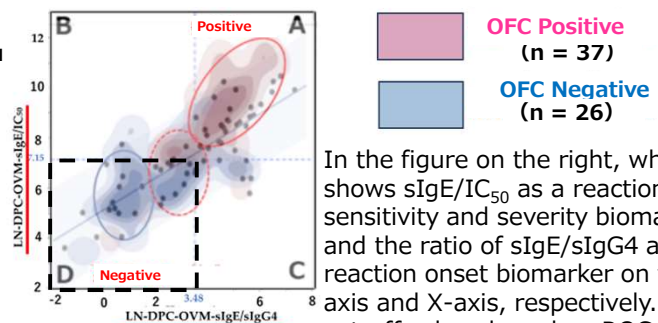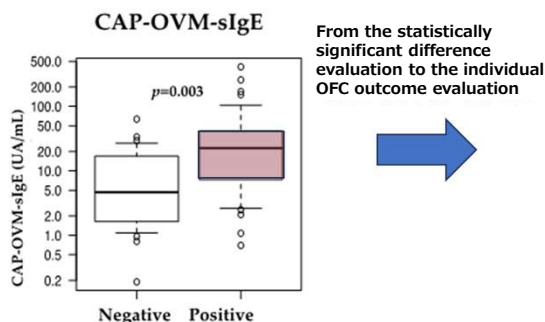Evaluation by <u>Quantity x Quality</u> instead of conventional antibody quantity measurement.

2. Measurement of binding-avidity of antibodies by competitive binding inhibition between immobilized antigen on the DCP microarray and added serially diluted soluble antigen.

Competitive binding inhibition assay

Antigen binding-avidity = $1/IC_{50}$ (nM)

3. Identification of OFC negativity in allergic patients

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(Total : n = 63)

From the statistically significant difference evaluation to the individual OFC outcome evaluation

OFC Positive (n = 37)

OFC Negative (n = 26)

Although the current ImmunoCAP OVM sIgE assay detects statistically significant differences between OFC positive- and negative-groups, <u>it is difficult to determine the OFC-positivity or -negativity of individual patients.</u>

In the figure on the right, which shows $sIgE/IC_{50}$ as a reaction sensitivity and severity biomarker and the ratio of sIgE/sIgG4 as a reaction onset biomarker on the Y-axis and X-axis, respectively. Each cut-off values based on ROC analysis of OFC negativity/positivity determine individual OFC outcomes. **Negative probability in the D-area provides future safe dietary intake doses in daily life.**

Allergen-specific antibody assay (IgG1, IgG4, IgA, IgE)
Antigen binding-avidity antibody titer assay

for Reserch use

	Allergen			Sample Volume	Storage
Allergen-specific antibody assay Specific IgE Specific IgG1 Specific IgG4 Specific IgA	Egg White Egg York Cow Milk Buckwheat Peanut Shrimp Crab Salmon Tuna	House dust Dermatophagoides farina Dermatophagoides 　　　pteronyssinus Dog dander Cat dander Japanese Cedar Hinoki Cypress Birch White Alder Europian Anthoxanthum odoratum Orchard grass Ragweed Timothy	Ovomucoid Ovalbumin Casein α-Casein β-Casein β-Lactoglobulin Gluten Gliadin Ara h 1 Ara h 2 Cry j 1 Cry j 2 Der f 1 Der f 2	Der p 1 Der p 2 Alt a 1 Cla h 8 Asp r 1	Serum 100 µL	-25℃

	Allergen			Sample Volume	Storage
Antigen binding-avidity antibody titer assay	Ovomucoid Casein	Der f 1 Der f 2 Cry j 1 Cry j 2		Serum 100 µL	-25℃

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Contract manufacturing and inspection of DCP chips

For inquiries or requests for inspections, please contact us at the contact information below.

Contact us :
　　Applied Medical Enzyme Research Institute Corporation

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