Anti-GAD / IAA / IA2

Diabetes Monitoring

Enzyme immunoassays for the quantitative determination of:

- Autoantibodies against GAD antigens (Anti-GAD)
- Autoantibodies specific to human Insulin (IAA)
- Autoantibodies to Protein Tyrosine Phosphatase (IA2)

Type 1 diabetes, also known as insulin-dependent diabetes mellitus (IDDM), results from a chronic autoimmune destruction of the insulin-secreting pancreatic beta cells. Autoimmune destruction of beta cells is thought to be completely asymptomatic, until 80-90% of the cells are lost. This process may take years to complete and may occur at any time, in all ages. During the preclinical phase, this autoimmune process is marked by circulating autoantibodies to beta cell antigens. These autoantibodies, such as anti-insulin (IAA), anti-glutamic acid decarboxylase (GAD) and anti-tyrosine phosphatase ICA 512 (IA2), are present years before the onset of type 1 diabetes, and prior to clinical symptoms.

Anti-GAD is an enzyme that catalyzes the conversion of glutamate to GABA. It has been identified in two isoforms: molecular weight 65.000 (GAD65) and 67.000 (GAD67). GAD65 autoantibodies (GAD65 Abs) are present in 70-80% of newly diagnosed patients with type 1 diabetes.

IAA are particularly important when determining type 1 diabetes risk since their prevalence is significantly elevated in subjects developing the disease in childhood and, moreover, they are often the first autoantibodies to be detected before onset of the disease. The prevalence of IAA is inversely correlated with the age of diagnosis.

IA2 is a member of the protein tyrosine phosphatase family, is localized in the dense granules of pancreatic beta cells and is the second defined recombinant islet cell antigen. IA2 autoantibodies are present in the majority of individuals with new-onset type 1 diabetes and in individuals in the pre-diabetic phase of the disease. The appearance of autoantibodies to IA2 seems to be correlated with the rapid progression to overt type 1 diabetes.

The IAA measurement, together with that of antibodies glutamic acid decarboxylase (GAD65 Ab) and protein tyrosine phosphatase-like antigen IA2, forms the basis of current strategies for predicting future onset of type 1 diabetes.

Features and benefits

- New immuno-enzymatic quantitative tests with ready to use standard curve
- Use of common units derived from the WHO standard
- Sera control included
- Human recombinant antigens
- Excellent correlation vs the gold standard methods
- A combination of 3 methods reach the highest clinical specificity and sensitivity in diagnosis of type 1 diabetes

Specifications

Format	ELISA
Calibrators & Contols	**Anti-GAD:** Ready To Use – 5 + 2 vials – 0.7 mL each – 5 concentration levels **IAA:** Ready To Use – 5 + 2 vials – 1 mL each – 5 concentration levels **IA2:** Ready To Use – 4 + 2 vials – 0.7 mL each – 4 concentration levels
Assay Range	**Anti-GAD:** 1.0 - 250.0 IU/mL **IAA:** 0.1 - 20.0 U/mL **IA2:** 7.5 - 350.0 IU/mL
Sensitivity	**Anti-GAD:** 0.24 IU/mL **IAA:** 0.1 U/mL **IA2:** 0.37 IU/mL
Minimum Sample Volume	**Anti-GAD:** 25 µL **IAA:** 100 µL **IA2:** 50 µL
Sample Type	**Anti-GAD:** Serum **IAA:** Serum **IA2:** Serum/Plasma

Ordering information

Product Name	Description	Code
Anti-GAD	96 wells	DKO082
IAA	96 wells	DKO083
IA2	96 wells	DKO084

Complementary Products

Product Name	Description	Code
Insulin ELISA	96 wells	DKO076
C-Peptide ELISA	96 wells	DKO077

Visit www.idsplc.com for an extended range of IDS assays

References

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