

## CLINICAL SPECIFICATIONS

### ISLET CELL ANTIGEN (IA-2)

#### Function:

Islet cells are found in the region of the pancreas that contains its hormone-producing cells. Hormones produced in the islets are secreted directly into the blood flow by different types of cells including the beta-cell. Insulin is a hormone that plays a role in the regulation of carbohydrate and fat metabolism.

#### Antibodies Appear:

Type 1 Diabetes<sup>1-3</sup>  
Unexplained Hypoglycaemia<sup>4</sup>

**Known Cross-Reactions:** Islet Cell Antigen with Coxsackievirus, Seaweed, Guar gum, Apricot, Pea Lectin, Spinach, Cooked white and brown Rice, Cooked Garlic, Zucchini, Mackerel, Egg yolk, Garbanzo bean, Carrageenan, Soybean agglutinin, Bell Pepper, Mint<sup>5,6</sup>

#### Clinical Significance:

Diabetes mellitus is generally classified as either Type 1 (insulin dependent diabetes mellitus) or Type 2 (non-insulin dependent diabetes mellitus). In most instances, the onset of Type 1 diabetes mellitus (T1DM) is the result of autoimmune destruction of insulin-producing beta cells in the pancreatic islets and the ensuing loss of endogenous insulin secretion.<sup>1</sup> IA-2, previously known as ICA-512, is an important target of autoantibodies associated with the development of T1DM.<sup>2</sup> Measurement of these immunologic markers has been shown to be of considerable value in assisting the attending clinician with the diagnosis of patients with diabetes.<sup>1,2,3</sup> Multiple islet cell antibodies (ICAs) at diagnosis of diabetes can predict future complete beta-cell failure; after diagnosis ICA development in patients who were antibody negative at diagnosis indicate decreasing beta-cell function.<sup>1</sup> ICAs may precede diabetic symptoms by several years, even in people with normal glucose tolerance, but these titers are not always followed by diabetes. ICAs are often present at or soon after the clinical onset of insulin-dependent diabetes, but their prevalence decreases thereafter.<sup>1-3</sup>

#### References:

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3. Pardini, et al. Frequency of islet cell autoantibodies (IA-2 and GAD) in young Brazilian Type 1 diabetes patients. *Brazilian Journal of Medical and Biological Research*, 1999, 32:1195-1198.
4. Lendrum, et al. Islet-cell, thyroid, and gastric autoantibodies in diabetic identical twins. *Br Med J*, 1976, 1:553-556.
5. Kharrazian, et al. Detection of islet cell immune reactivity with low glycemic index foods: is this a concern for Type 1 diabetes? *J Diabetes Res*, 2017; 2017:4124967.
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