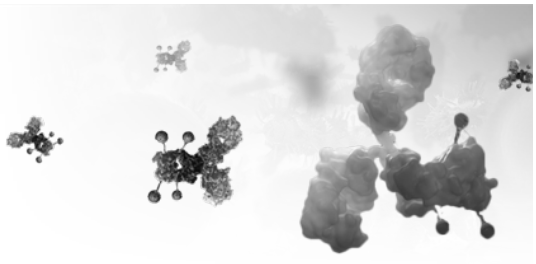

Recombinant Human IA2 (DAG4558)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Species	Human
Purity	> 90%
Conjugate	TBD
Applications	ELISA &WB (titer need to be determined)
Molecular Weight	45 kDa
Recommended Usage	For application in indirect ELISA for coating procedure.
Format	Lyophilized
Size	1 mg
Buffer	25mM Tirs-HCl, 0.02%SDS, pH8.5
Preservative	None
Storage	Short term: 2-8°C; Long term: -20°C

BACKGROUND

Introduction	Type 1 diabetes, also known as insulin-dependent diabetes mellitus (IDDM), results from a chronic autoimmune destruction of the insulin-secreting pancreatic beta cells, probably initiated by exposure of genetically susceptible host to an environmental agent. 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. During the preclinical phase, this autoimmune process is marked by circulating autoantibodies to beta cell antigens. These autoantibodies are present years before the onset of type 1 diabetes and prior to clinical

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symptoms. Early studies utilized the immunofluorescence test for islet-cell antibodies (ICA), which has been difficult to standardize and is now replaced by a combination of several radioimmunoassays for antibodies against specific beta cell antigens, such as insulin (IAA), glutamic acid decarboxylase (GAD) and tyrosine phosphatase ICA 512 (IA2). IA2, a member of the protein tyrosine phosphatases family is localized in the dense granules of pancreatic beta cells and the second defined recombinant islet cell antigen. IA2 shares sequence identity with the islet cell antigen 512. The higher frequency of antibodies to IA2 is explained by the presence of autoantibodies directed to the COOH terminus of IA2 which is lacking in the ICA512 molecule. 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 combination of tests for GAD65 and IA2 autoantibodies is highly relevant for risk assessment of type 1 diabetes in children and adolescence. The screening for GAD65 and IA2 autoantibodies detect more than 90 % of subjects at risk for type 1 diabetes and may, therefore, possess the potential to replace ICA technique.

Keywords IA2; IA-2 protein; tyrosine phosphatase ICA 512

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