NOVEL ANTIGEN TARGETS IN AUTOIMMUNE DISEASES (LUPUS AND TYPE I DIABETES) USEFUL FOR VACCINE DEVELOPMENT AND TREATMENT

Technology description

BACKGROUND

Systemic lupus erythematosus (SLE) and type I diabetes are two different autoimmune diseases each thought to arise as a result of multiple genetic and environmental factors. SLE is a systemic autoimmune disease that affects many different tissues. The diagnosis and assessment of this disease rely primarily on clinical findings and the detection of auto-antibodies to nuclear components of cells, all of which are not completely reliable. Currently, there is no permanent cure for SLE, and treatment aims to relieve symptoms by decreasing inflammation and/or the level of autoimmune activity. Type I diabetes is a disease characterized by the loss of the insulin-producing beta cells by a T-cell mediated autoimmune attack. Like SLE, there is no known preventive measure or cure for type I diabetes, and the primary treatment is replacement of insulin combined with careful monitoring of blood glucose levels. The diagnosis of type I diabetes is usually prompted by recent-onset of symptoms of excessive urination and thirst, or as a result of other medical problems (eg. heart attack, stroke, foot ulcers, etc.) that are frequently caused by diabetes.Novel approaches to profiling autoimmune responses could provide novel insights into the immunobiology of SLE and type I diabetes, and could lead to earlier diagnoses and improved treatments.

DESCRIPTION

UCSF investigators have identified novel antigens against which immune responses are induced in patients with SLE and type I diabetes. Using a proteomic approach, in addition to detecting autoantibodies to known SLE- or diabetes-associated antigens, the UCSF investigators also identified novel self-antigens that are also associated with the respective disease state. These results could provide novel approaches to the diagnosis and assessment of each of these autoimmune diseases.

Application area

Development of a laboratory assay to diagnose disease and guide treatment
Development of a laboratory assay to assess risk for developing disease
Development of immunomodulatory treatments

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