Monitoring immune responses in disease

September 3 2008

A recent study (doi:10.1016/j.clim.2008.06.009) published in *Clinical Immunology,* the official journal of the Clinical Immunology Society (CIS), describes a new method enabling the detection of multiple parameters of single human cells. The report demonstrates the characterization of specific blood cells from an individual with type 1 diabetes, providing information about the role these cells might play in the development of the disease and during therapy.

Classification of blood cells, including B and T cells, is important for distinguishing immune responses to pathogens, allergens, or self-antigens in autoimmune diseases. Although various techniques are available to identify cell surface determinants, cytokines and antibodies secreted by blood cells, so far it has not been possible to study multiple secreted proteins while also assigning surface displayed markers to individual living cells.

A collaborative group of investigators from Harvard Medical School and Massachusetts Institute of Technology in the USA, describe how a combination of existing and enhanced immunological methods can identify and characterize rare B cells from blood of a recent onset type 1 diabetic subject.

"Although this is a small pilot study, it is a useful proof of principle for single cell interrogation methodology, which is potentially of general utility", according to immunologist Gerald Nepom from the University of Washington, School of Medicine in Seattle, USA in his commentary published in the same issue of *Clinical Immunology*

(http://www.elsevier.com/locate/yclim).

"This article describes a very exciting new immunodiagnostic tool, potentially enabling the discovery of novel biomarkers for the pathogenesis of immunologic disorders and in monitoring therapy", said Andy Saxon", the Editor-in-Chief of the CIS journal.

Source: Elsevier