The difficult Way to HIV Vaccine

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T cells are key players in the immune response to HIV, which are able to delete infected cells. This capacity is used for vaccine development against HIV. “To date however, success of this strategy remains elusive. Our understanding of T cell efficacy is still limited, and we need to identify precise T cell correlates of protection that could guide rationale vaccine design”, says Victor Appay, Group leader HIV Pathogenesis and Immunosenescence, Hopital Pitie-Salpetriere, Paris, at the 2nd European Congress of Immunology ECI 2009 in Berlin.

T cell based vaccines against HIV focus on the subtype of CD8+ T cells, which are able to recognize and destroy virus infected cells and tumour cells. “Our aim is to return to basic Immunology to explore in details the factors that govern the development and maintenance of effective CD8+T cell responses in HIV infection” Appay stresses. For this purpose, the scientists use a variety of approaches based on novel technologies to study in HIV infected patients the functional attributes of CD8+ T cells down to the level of the primary immune resources.

The recent results highlight the importance of antigen sensitivity, i.e. the strength of interaction between the effector CD8+ cell and the HIV infected target cell to control HIV replication. Antigen sensitivity determines important features of CD8+ T cells: 1- the polyfunctional profile (i.e. the capacity to produce a number of effector soluble factors simultaneously), 2- the expansion and turnover (i.e. the celluar proliferation and replacement) 3- the HIV suppressive capacity of the T cells (i.e. the ability to maintain low levels of or even prevent HIV replication by killing infected cells), which are hallmarks of CD8+ T cell

efficacy against HIV.

Moreover, the work of his team focuses also on the development with progressive HIV disease of premature immunosenescence, or immune ageing, a phenomenon which usually occurs in old age. “This work is directly relevant to strategies aimed at developing successful T cell based vaccines and to our understanding of HIV pathogenesis, but also more generally, of immune decline with age” Appay says.

EFIS is an umbrella organization that represents more than 12,000 individual members from 28 member societies in 31 European countries (all European Union member states and all other European states) and reaches beyond the European boundaries to Israel.

“Immunity for Life - Immunology for Health”: with this as their motto, all National European Societies of Immunology will convene from the 13th to 16th September, 2009, in Berlin, Germany. This Congress offers a four day comprehensive program on the state of the art in Immunology. More than 30 symposia and 60 workshops will cover topics from basic research to applied Immunology. The foci of this meeting are newly acquired knowledge about innate and adaptive immunity, the various aspects of immunological diseases, as well as new options for immune interventions. Professor Reinhold E. Schmidt, the president of the Congress and Director of the Clinic for Immunology and Rheumatology at Hanover Medical School, is pleased to invite journalists to attend this event.

Source: German Society for Immunology