3.4.06

EARLY DIFFERENTIATION ANTIGEN COMMON TO B AND T LYMPHOCYTES. N. Gross, J.-P. Mach and S. Carrel, Ludwig Institute for Cancer Research, Lausanne, Switzerland.

A rabbit anti-Daudi serum absorbed with non lymphoid, Ia-positive cells (END-1) and NHS, was able to detect a surface antigen common to subpopulations of normal B and T lymphocytes. In addition, the antiserum could distinguish poorly differentiated cells such as acute leukemia lymphocytes, T-cell lines and Burkitt lymphoma-derived B-cell lines from more differentiated chronic leukemia lymphocytes and normal B cell lines. The antigen detected could therefore be considered as an early differentiation antigen common to the B and T lineage.

Immunoprecipitation experiments performed with I^{125}- or Na B $(H^3)_4$-labelled membrane proteins followed by PAGE-SDS analysis, suggested that the antigen detected by anti-Daudi serum is a largely glycosylated protein of MW superior to 170'000 Daltons. The observed heterogeneity of the antigen when analysed on various cells such as thymocytes, T or B cell lines suggest that several forms of the glycosylated antigen are represented on different cell types.

3.4.07

THE DEVELOPMENT OF LYMPHOCYTE SUBPOPULATIONS IN MICE. J. J. Haaijman, J. A. Ledbetter and L. A. Herzenberg. Dept. of Genetics, Stanford University, Stanford, CA, 94305, USA.

Monoclonal rat antibodies directed against the Thy-1, Lyt-1, Lyt-2 and T200 antigens were used to study the development in spleen, thymus and bone marrow of lymphocyte subpopulations in BALB/c mice using the fluorescence activated cell sorter (FACS). In spleen, liver and bone marrow of neonates staining was observed only with anti-T200. The positive cells (about 20% of nucleated cells) have a tight fluorescence distribution and a size of about 15 µm. When sorted these cells are able to reconstitute an irradiated animal. The percentages of Thy-1, Lyt-1 and Lyt-2 positive cells increase in spleen gradually from 10 days of age onwards and plateau at about 6 weeks. No indication was obtained of a large population of Lyt-1,2 positive cells in neonatal spleen and the rate of development of Lyt-2 positive and Lyt-2 negative cells was similar. The hypothesis that the thymus releases only Lyt-1,2 positive cells thus becomes questionable.

3.4.08 PW

NEUTRAL GLYCOLIPID, ASIALO GM_1, AS A NEW DIFFERENTIATION MARKERS OF THYMOCYTES. Habu, S., Kasai, M.*, Tamaoki, N., Tada, T.*, Herzenberg, L.A.** and Okumura, K.* Dept. Path., Tohkai Univ., Isehara, Kanagawa, Japan, Dept. Immunol., Fac. Med., Univ. Tokyo, Tokyo, Japan* and Dept. Immunogenetics, Stanford Univ. Sch. Med., Stanford.

3.4.09 P

RECEPTORS ON THYMIC EPITHELIAL CELLS FOR T CELL PRODUCED ANTIGEN BINDING FACTORS. J.Jason, K.Bottomly, and C.A.Janeway,Jr. Yale University. New Haven, Ct.

A simple technique has been developed for culturing murine thymic cell components, with the predominant cell type being epithelial. The epithelial nature has been documented by light microscope histology,electron microscopy, and keratin positivity in flourescent and radioimmuno assays. A second cell type that can be removed by selective secondary culture, appears to be a macrophage. Both epithelial and macrophage-like cells within this system will bind to the non-antigen specific portion of two T cell produced antigen binding factors. Macrophage binding can be competatively inhibited by preincubation with aggregated immunoglobulin or with anti sheep red blood cell antibody coated sheep red cells, while epithelial binding is not. This data suggests the presence of receptors for the non-idiotypic portion of T cell factors on murine thymic epithelial cells. These receptors may play a role in T cell development. We would speculate that receptors of this nature may permit thymic epithelium to acquire T cell factors in a fashion permitting the idiotypic portion to interact with anti-idiotypic receptors on T cell precursons. This interaction, at a critical time in T cell ontogeny, could have significant effects on that cell population's development.

3.4.10 P

"SEARCH FOR ANTIBODIES AGAINST A SELF-SPECIFIC T CELL RECEPTOR". Dale E. Kipp and Alan R. Williamson, Biochemistry Department, University of Glasgow, Glasgow G12 8QQ, U.K.

The nature and multiplicity of T cell receptors for antigen and for products of the major histocompatibility complex is uncertain. A protocol designed to generate antibody directed towards T cell receptor specific for self MHC antigens involves 1) immunization of B10 nu/nu mice with Mitomycin C treated, nylon wool passed B10 +/+ cells, 2) challenge on day one with lipopolysaccharide to non-specifically stimulate the antigen pulsed B cells, 3) three days later, fusion of spleen cells with MOPC 315.43 myeloma cells, 4) the resultant hybrids selected using HAT medium. A total of forty clones have been selected and are presently being characterized for the production of antibody towards nylon wool passed B10 cells using radioimmunoassay and microcytotoxicity. Further characterization of the positive monoclonal antibodies will be attempted by the inhibition of MHC restricted cell cytotoxicity to hapten modified syngeneic cells.

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3.4.11 PW

IDENTIFICATION OF IMMATURE THYMOCYTES RESPONSIVE TO T-CELL GROWTH FACTOR. P. Kisielow and P. Dråber, Institute of Immunology and Experimental Therapy, 53-114 Wrocław, Poland.

We have studied the surface phenotypes of immature thymocytes which are the target for T-cell growth factor enabling this otherwise unresponsive cell population to mount a strong proliferative response to concanA (ConA). Our results indicate that (i) immature thymocytes fulfiling all criteria of "immaturity" (high density of ThyI, low level of H-2, cortisone sensitivity, lectin agglutinability and high density) are unresponsive to ConA even in the presence of TGF, and (ii) that the ability of ConA unresponsive, immature populations of thymocytes to respond to this mitogen in presence of TGF is a function of a minor (about 10 %) population of peanut lectin positive cells of high density, which have cell surface phenotypes similar to that of mature T cells, i.e. low level of ThyI, high level of H-2 and differentiated Lyt phenotype.

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