

Book Reviews

Leucocyte Typing V; White Cell Differentiation Antigens, Vols. 1 and 2; Edited by S.F. Schlossman, L. Boumsell, W. Gilks, J.M. Harlan, T. Kishimoto, C. Morimoto, J. Ritz, S. Shaw, R. Silverstein, T. Springer, T.F. Tedder and R.F. Todd, Oxford University Press, Oxford, 1995. Vol. 1, xxvi + 1223 pp. Vol. 2, xii + 2052 pp. £175.00 (hc). ISBN 0-19-2623761.

This edition is the proceedings of the 5th international workshop and conference held in Boston, USA, November 1993. More than 800 have contributed to this important publication, which is the result of an extraordinarily successful international co-operative effort to undertake the serological, biochemical, immunohistochemical and molecular characterization of 150 leukocyte antigens, being mainly of differentiation and functional relevance not to be mistaken for histocompatibility antigens, the HLA antigens.

The book is organized in 10 parts, an appendix with a CD (Cluster of Differentiation) guide, a list of contributors and an index to both volumes. The use of monoclonal antibodies (mAb) to understand the many different molecules that populate the surface of hematopoietic cells has been the goal of all five international workshops on leukocyte differentiation antigens. The book is the result of a very positive process facilitating insight into white cell differentiation antigens. This process enormously clarifies the communication between all involved in the work with human cellular interactions.

Although the production of a book set like this is a long effort it makes it possible for investigators to be updated even if one had not been directly involved in the workshop by creating the data or by participating in the Conference.

The present day status in the scientific community could not have been reached without book sets like the present one. In the beginning, the objective was to identify markers specifically for individual lineages of cells (T-cells, B-cells etc.). In the 5th workshop the concept of the 'blind panel' was introduced and used to make a clarification of which molecules are lineage-restricted and which are expressed on multiple lineages. The 'blind panel' was a comprehensive panel of coded monoclonal antibodies recognizing all known CD structures, other known structures that have not yet received a CD designation as well as a series of unknown monoclonal antibodies which could be provided in a blinded fashion to various investigators. Specificity could then be assigned to unknown mAb. The extensive analysis is the basis for a resource to scientists for understanding the biology of these molecules. A leukocyte differentiation antigen database (LDAD) has been created. This has been the basis for the construction of a poster of antigen expression by cell type from CD1 to CDw130. In addition to the poster and as described in the book, there is an indication of the change upon activation of the individual CDs on the different cell types. This is quite a useful introduction to an overview of the many markers.

The book is of great importance to those working with diagnosing and classification of hematological malignancies and immune deficiencies as well as all investigators experimentally working with characterization of blood cells in physiological and pathologic

interactions, especially leukocytes and platelets. During dynamic responses of cells modified by cytokines, the studies and knowledge of receptors for cytokines are important parts. Many of these cytokine receptors have now got a CD number. Many well known CDs are described in a very clear way, for example CD10, the common acute lymphoblastic leukemia antigen (CALLA) already identified in the first workshop, but now there is a description of cellular and tissue distribution, the relationship to lymphoid malignancy, the results of molecular cloning, chromosome location and function.

For the first time an adhesion structure workshop was organized during the 5th international workshop. Many important contributions have been made concerning the adhesion structures for cellular function and disease processes. For example the CD15s is a new CD for the sialyl Lewis X antigen now being brought into context with human leukocytes although the structure was first described in 1976.

The lay-out of the book is of the highest standard with good section reports, tables and figures. Based on the contributions in this book and knowledge from earlier conferences we probably know more about the functional, biochemical and molecular characteristics of the human lymphocyte and related cells than any other cell in the body. Presented in the book are new CD clusters and subclusters and re-definitions of previously established clusters. The presentation of this extensive amount of facts is stimulating. Depending on the state of mind it may be frustrating to realize how much needs to be learned before we fully understand the interactions between CD antigens on the different cells, T-cells, B-cells, myeloid cells, NK (natural killer) and endothelial cells in concert with cytokine receptors and free cytokines in specific disease processes resulting in a clinically manifest disease state in the human being. However, the appearance of a two volume book, such as this *Leucocyte Typing V*, is of utmost importance for keeping in touch with expanding knowledge. This can make it clearer to design diagnostic and monitoring protocols in many diseases with an immunological element. The cross lineage analysis of expression of differentiation antigens as presented in this book will help us to combine the many interactions in health and disease, enabling us to diagnose more precisely and maybe to create new treatment modalities. The present book will help us to show the way. All laboratories doing flowcytometry should immediately provide the *Leucocyte Typing V* book set.

This will be a most valuable tool in the process of continuous medical education. We will all eagerly consult this book set to keep in touch with recent progress.

Niels Grunnet

Non-isotopic Methods in Molecular Biology. A Practical Approach; Edited by E.R. Levy and C.S. Herrington, Oxford University Press, Oxford, New York, Tokyo, 1995. xxii + 221 pp. £27.50 (pb). ISBN 019 963 4556.

This book is the newest addition in the well-known 'The Practical Approach Series' from IRL Press. The common denominator for this last volume is the use of non-isotope methods in molecular biology, i.e. visualization of specific DNA and RNA sequences by hybridization of fluorescence- or hapten-labelled probes instead of radioactive probes.

The most pressing need for non-radioactive systems for DNA and RNA detection is undoubtedly felt by those who want to visualize nucleic acid sequences in morphologically conserved structures (in situ hybridization), because radioactive labelling generally give rise to low spatial resolution and often troublesome high background. With regard

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White blood cells are divided into two main groups that include granulocytes (neutrophils, eosinophils, basophils and mast cells) and mononuclear leukocytes (lymphocytes, monocytes, macrophages and dendritic cells) specialized to respond to infectious agents in the body. Given that all white blood cells are over 5 micrometers in diameter, they are large enough to be seen using a typical optical microscope (compound microscope). In: *Leucocyte Typing V: White Cell Differentiation Antigens*. Edited by S.F.Schlossman, L.Boumsell, W.Gilks, J.M. Harlan, T.Kishimoto, C.Morimoto, J.Ritz, S.Shaw, R.L.Silverstein, T.A.Springer, T.F.Tedder, and R.F.Todd. Edited by S.F.Schlossman, L.Boumsell, W.Gilks, J.M. Harlan, T.Kishimoto, C.Morimoto, J.Ritz, S.Shaw, R.L.Silverstein, T.A.Springer, T.F.Tedder, and R.F.Todd. Oxford University Press, Oxford, p. 984 - 985 (1995) Impact factor: Number of citations: 3. Constitutive expression of activation-related antigens on the surface membrane of human basophils. In *Leucocyte Typing IV*, W.Knapp et al., eds., Oxford University Press, p 488-489 (1989) Impact factor: Number of citations: 1. 1995. Preface. In *Leucocyte Typing V. White Cell Differentiation Antigens*. S. F. Schlossman, L. Boumsell, W. Gilks, J. M. Harlan, T. Kishimoto, C. Morimoto, J. Ritz, S. Shaw, R. Silverstein, T. Springer, T. F. Tedder, and R. F. Todd, eds. Oxford University Press, Oxford, U.K., p. vi. Caligaris-Cappio F. *Leucocyte Typing IV: White Cell Differentiation Antigens*. New York, NY: Oxford University Press; 1989:1049-1053. 3. Clevers H, Alarcón B, Wileman T, Terhorst C. The T cell receptor/CD3 complex: a dynamic protein ensemble. *Annu Rev Immunol*. 98. Lewis DE, Puck JM, Babcock GM, Rich RR. In: Schlossman SF, Boumsell L, Gilks W, et al, eds. *Leucocyte Typing V: White Cell Differentiation Antigens*. New York, NY: Oxford University Press; 1995:505-507. 121. Letarte M, Vera S, Tran R, et al. Human Myelomonocytic Differentiation Antigens Defined by Monoclonal Antibodies. R. Todd, A. Bhan, S. Kabawat, S. F. Schlossman. *Biology*. 1984. With the advent of monoclonal technology, it has been possible to define surface membrane markers which discriminate among subpopulations of lymphoid and myeloid cells that relate to both ontogeny. *Expand*. 26. CD antigens 1993. S. F. Schlossman, L. Boumsell, +7 authors T. Springer. *Medicine*. 15 February 1994. *Leucocyte typing V : white cell differentiation antigens : proceedings of the Fifth International Workshop and Conference held in Boston, USA, 3-7 November, 1993*. S. F. Schlossman. *Medicine*. 1995.