The Journal of Immunology

RESEARCH ARTICLE | OCTOBER 01 1978

Monoclonal Antibodies to H-2 and Ia Antigens FREE

V. T. Oi; ... et. al

J Immunol (1978) 121 (4): 1606.
https://doi.org/10.4049/jimmunol.121.4.1606.b

0022-1767/78/1214-1606/$02.00/0
THE JOURNAL OF IMMUNOLOGY

Vol. 121, No. 4 October 1978
Printed in U.S.A.

ABSTRACTS OF PAPERS PRESENTED AT THE FOURTH *Ir* GENE WORKSHOP[1]: GENETIC, MOLECULAR, AND FUNCTIONAL ASPECTS OF SPECIFIC IMMUNE RESPONSE GENES AND THEIR PRODUCTS

ANNAPOLIS, MARYLAND, MAY 22–24, 1978

SESSION 1

Genetics, Serology, and Cellular Expression of Ia Antigens

CHAIRMAN: DR. DONALD SHREFFLER

The Identification of an Ia^+ Ig^- $Thy\text{-}1^-$ Cell in Bone Marrow. Ian McKenzie, Jenni Owen and Chris Parish. Austin Hospital, Heidelberg, Australia and Australian National University, Canberra, Australia.

Mouse bone marrow contains 10–20% of cells which type as being Ia^+. A proportion of these are Ia^+ Ig^+ B cells and a very small number are IJ^+ Thy^+ T cells. When both T and B cells are removed, by separation on isopaque ficoll, a constant 5–10% of cells remain which are Ia^+ Ig^- $Thy\text{-}1^-$. These cells do not adhere to carbonyl iron, but show some affinity for nylon wool. Using a variety of strains and antisera, it is clear that this cell does not carry determinants of the IJ, IE or IC subregions but can be readily detected with antisera to the IA subregion. The cells are present in mice lacking T cells: nude, ATXBM, ALS-treated and are therefore, presumably, not related to the later stage of T cell differentiation. Furthermore, these cells do not carry the T cell markers Ly-1, 2, 3, 5, 6 or Tla, but may carry small amounts of the B cell markers Ly-4 (Lyb-1); Lyb-2 and Ly-M. They do not type as $Ly\text{-}7^+$ nor do they carry Fc or C3 receptors. The cell is probably an early B cell, but a macrophage/monocyte precursor has not been excluded.

Monoclonal Antibodies to H-2 and Ia Antigens. Oi, V. T., J. W. Goding, P. P. Jones, L. A. Herzenberg and L. A. Herzenberg. Department of Genetics, Stanford University School of Medicine, Stanford, Calif. 94305

Seven stable hybrid cell lines producing monoclonal IgG antibodies reacting with H-2 and Ia antigens have been established. The lines were obtained by fusing NS-1, a nonsecreting variant of MOPC-21 (Köhler, G., Howe, S. C., and Milstein, C., *Eur. J. Immunol.* 1976. *6:* 292) with spleen cells from either BALB/c or C3H.SW.Ig^b (CWB) mice that had been immunized with *H-2*^{k} haplotype spleen cells. One of the monoclonal antibodies reacts with $H\text{-}2K^k$ determinants; the remaining six react with determinants mapping to the *I-A*^{k} subregion. The antigens bound by the anti-$I\text{-}A^k$ antibodies were analyzed by two-dimensional electrophoresis and were found to consist of the same polypeptide chains as are precipitated by anti-$I\text{-}A^k$ alloantisera. The Ia antigenic determinants recognized by these monoclonal antibodies and their presence on lymphocyte subpopulations have been characterized by ^{125}I-binding assays, complement-mediated cytotoxicity, and immunofluorescence, by using the fluorescence-activated cell sorter (FACS).

Polymorphisms of Murine Ia Loci in Wild Mice: Serological Analysis of the I Region Antigens in a Collection of Wild Derived H-2 Haplotypes. Edward K. Wakeland, William R. Duncan, and Jan Klein. University of Texas Health Science Center at Dallas, Dallas, Tex. 75235

The polymorphism of antigens produced by the I-A and the I-EC subregions was assessed in a collection of B10 congenic lines containing wild derived H-2 haplotypes (B10.W lines). Utilizing alloantisera prepared and analyzed with inbred lines and H-2 recombinants, a total of 29 B10.W lines were tested for 19 inbred Ia antigens of the I-A or I-EC subregions. This survey revealed: 1) that both public and private inbred Ia antigens of the I-A and the I-EC subregions are present among wild mice; 2) that the I-A subregion is more complex serologically than the I-EC region; 3) and that some wild mice do not have any of the inbred public or private antigens of either the I-A or the I-EC subregions. Serological and immunochemical characterization of alloantisera prepared in inbred lines against some of the B10.W lines has demonstrated the presence of public and private Ia antigens among wild mice that are absent from the inbred lines. These results indicate that the murine I region is extremely polymorphic and that the amount of polymorphism may vary among loci in the I region.

The costs of publication of this article were defrayed in part by the payment of page charges. This article must therefore be hereby marked *advertisement* in accordance with 18 U.S.C. Section 1734 solely to indicate this fact.

[1] The workshop was sponsored by the National Institute of Allergy and Infectious Diseases and the National Cancer Institute, National Institutes of Health, Bethesda, MD 20014 and by Burroughs-Wellcome Company, Litton Bionetics, Merck Sharp and Dohme Research Laboratories, and the Squibb Institute for Medical Research.

Dr. William E. Paul served as organizer and Drs. Carl W. Pierce and Carl Cohen as co-organizers. The program committee consisted of Drs. Baruj Benacerraf, Ira Green, Hugh McDevitt, William Paul, Carl Pierce, Alan Rosenthal, David Sachs, Ronald Schwartz, Gene Shearer, Ethan Shevach, and Donald Shreffler.