Immunological Methods

VOLUME II

EDITED BY

IVAN LEFKOVITS

BENVENUTO PERNIS

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IVAN LEFKOVITS
The Basel Institute for Immunology
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Preface

The development of research methodology suited to its special needs has been a major factor in propelling immunology to its present unique position among the biological sciences. Impressive as is the record of this timely emergence of methodology, ever newer and more innovative research methods continue to evolve.

Dissemination of this newer, changing methodology is at best an uncertain, diffuse affair. Eventually most of it appears in one form or another in the traditional experimental journals, but at the time of their inception the details of individual methods, their potential, and, thus, limitations are to a large extent communicated informally by personal contact. It is in this latter context that investigators at The Basel Institute, operating in the "hot-spots" of immunology, play an important role in that they constitute a lively, critical, interacting environment with associations that favor the verification, refinement, and consolidation of novel experimental procedures. In this respect The Basel Institute has become a kind of proving ground and clearing house for experimental design, probes, and approaches to coping with basic biologic issues. It is our aim to have these volumes, insofar as possible, reflect the methodologic advances that emerge from this informal, spontaneous, sorting-out process.

In the preceding volume a selected group of procedures was assembled with a view toward representation of diverse applications and areas of wide interest for most immunology laboratories. Our original concept, to which we remain committed, was to publish methods that were judged timely, compelling, or especially useful. In this sense, it was intended that volumes subsequent to the first one would *supplement* it rather than *supercede* it. This then is the first of such follow-up volumes, which are intended to provide a timely, fresh, updated assemblage of procedures judged especially appropriate for contemporary studies in immunology. It is not intended to seek a balance in such collections. Rather, it seems more appropriate to have each collection reflect the kind of activities prevailing at the time.

Such an ambitious projection of our intent might seem unduly optimistic were it not for the fact that The Basel Institute for Immunology has functioned so far as an international center for both young and established investigators from all over the world. It has become agreeably evident that visitors and staff as well continue generously to share, via these volumes, their methodologic knowledge and experience with colleagues everywhere.

Ivan Lefkovits
Benvenuto Pernis

Contents of Volume I

1 **The Quality of Antibodies and Cellular Receptors**
S. Fazekas de St. Groth

2 **The Isolation and Characterization of Immunoglobulins, Antibodies, and Their Constitutent Polypeptide Chains**
Jean-Claude Jaton, Daniel Ch. Brandt, and Pierre Vassalli

3 **Peptide Mapping at the Nanomole Level**
B. A. Moss

4 **Electrophoresis of Proteins in Polyacrylamide Slab Gels**
Béla Takács

5 **Resolution of Immunoglobulin Patterns by Analytical Isoelectric Focusing**
Dietmar G. Braun, Kerstin Hild, and Andreas Ziegler

6 **Isolation of Monoclonal Antibody by Preparative Isoelectric Focusing in Horizontal Layers of Sephadex G-75**
Wolfgang Schalch and Dietmar G. Braun

7 **Isotachophoresis of Immunoglobulins**
Andreas Ziegler and Georges Köhler

8 **The Chemical Modification of Proteins, Haptens, and Solid Supports**
Hansruedi Kiefer

9 **Reagents for Immunofluorescence and Their Use for Studying Lymphoid Cell Products**
Luciana Forni

10 **Radiolabeling and Immunoprecipation of Cell-Surface Macromolecules**
J. Richard L. Pink and Andreas Ziegler

11 **Haptenation of Viable Biological Carriers**
Helmut M. Pohlit, Werner Haas, and Harald von Boehmer

12 **Production and Assay of Murine Anti-Allotype Antisera**
Judith Johnson

13 Preparation of Mouse Antisera against Histocompatibility Antigens
C. Garrison Fathman

14 Technique of HLA Typing by Complement-Dependent Lympholysis
John W. Stocker and Domenico Bernoco

15 The MLR Test in the Mouse
Tommaso Meo

16 A Sensitive Method for the Separation of Rosette-Forming Cells
Bruce E. Elliot

17 The Use of Protein A Rosettes to Detect Cell-Surface Antigens
Judith Johnson

18 Hapten-Gelatin Gels Used as Adsorbents for Separation of Hapten-Specific B Lymphocytes
Werner Haas

19 Assay for Plaque-Forming Cells
Ivan Lefkovits and Humberto Cosenza

20 Plaquing and Recovery of Individual Antibody-Producing Cells
Marc Shulman

21 Assay for Specific Alloantigen-Binding T Cells Activated in the Mixed Lymphocyte Reaction
Bruce E. Elliot, Zoltán Nagy, and Markus Nabholz

22 Assay for Antigen-Specific T-Cell Proliferation in Mice
Şefik Ş. Alkan

23 Antigen-Specific Helper T-Cell Factor and Its Acceptor
Michael J. Taussig

24 *In Vitro* Immunization of Dissociated Murine Spleen Cells
Max H. Schreier

25 Induction of a Secondary Antibody Response *in Vitro* with Rabbit Peripheral Blood Lymphocytes
Alma L. Luzzati

26 Induction of Immune Responses with Clonal Dominance at High Antibody Levels
Dietmar G. Braun

27 Limiting Dilution Analysis
Ivan Lefkovits

28 Establishment and Maintenance of Murine Lymphoid Cell Lines in Culture
Max H. Schreier and Bernd J. Weimann

29 Clonal Growth of Cells in Semisolid or Viscous Medium
Norman N. Iscove and Max H. Schreier

30 Preparation of Sendai Virus for Cell Fusion
Reet Tees

31 Fusion of Lymphocytes
Georges Köhler

32 Soft Agar Cloning of Lymphoid Tumor Lines: Detection of Hybrid Clones with Anti-SRBC Activity
Georges Köhler

33 Isotype Laboratory
Helmut M. Pohlit, Jürg Widmer, and Ruedi Frech

34 Analysis of Immunological Data
Alberto Piazza

Subject Index

Abbreviations List

ACD	acid citrate dextrose
AET	2-aminoethylisothiouronium
ars	arsanilic acid
BBS	borate-buffered saline
BRC	bovine erythrocyte
BSA	bovine serum albumin
BSS	balanced salt solution
CBRC	coupled bovine erythrocytes
CFA	complete Freund's adjuvant
CGG	chicken gamma globulin
C-Ig	cytoplasmic Ig-containing
CMC	critical micelle concentration
CML	cell-mediated lysis
Con A	concanavalin A
CSE	charge shift electrophoresis
CTAB	cetyltrimethyl ammonium bromide
CTL	cytotoxic T lymphocyte
CTL-P	cytotoxic T lymphocyte precursor cell
DBSS	Dulbecco's balanced salt solution
DEAE	diethylaminoethyl
DHB	methyl-3,5-dihydroxybenzimidate
DMEM	Dulbecco's modified Eagle's medium
DMF	dimethyl formamide
DNP	dinitrophenyl
DOC	deoxycholate
EB	Epstein-Barr
EIA	enzyme immunoassay
E-RFC	E-rosette-forming T lymphocytes
EWB	egg white buffer
FA	fluorescent antibody
FBS	fetal bovine serum
FCS	fetal calf serum
FDA	fluorescein diacetate

FITC	fluorescein isothiocyanate
gal	galactoside
glu	*p*-aminophenylglucoside
GPC	gel permeation chromatography
HAT	hypoxanthine-aminopterinthymidine
HB	hepatitis B antigen
HEPES	*N*-2-hydroxyethylpiperazine-*N*'-2-ethanesulfonic acid
HLB	hydrophile–lipophile balance
HPGPC	high-pressure gel permeation chromatography
HPLC	high-performance liquid chromatography
HRC	horse erythrocyte
HSL	hapten sandwich labeling
HT	hypoxanthine–thymidine
Ia	immune-associated
IEF	isoelectrofocusing
IFT	immunofluorescence technique
Ig	immunoglobulin
IgG	immunoglobulin G
IL-2	interleukin 2
IMDM	Iscove's modified Dulbecco's medium
IMDM-ATL	IMDM supplemented with albumin, transferrin, and lipids
KLH	Keyhole limpet hemocyanin
lac	*p*-aminophenylactoside
LCH	*Lens culinaris* hemagglutinin
LPS	lipopolysaccharide
LSM	lymphocyte separation medium
MAR	monoclonal antibody-rosetting
ME	2-mercaptoethanol
MEM	minimal essential medium
MHC	major histocompatibility complex
MLC	mixed lymphocyte culture
MLR	mixed lymphocyte reaction
moi	multiplicity of infection
NCI	National Cancer Institute
NEPHGE	nonequilibrium pH gradient electrophoresis
NIH	National Institutes of Health
NP40	Nonidet P–40
N-SRBC	neuraminidase-treated sheep red blood cell
PBL	peripheral blood lymphocyte
PBS	phosphate-buffered saline
PEG	polyethylene glycol

PFC	plaque-forming cell
PFU	plaque-forming unit
PHA-P	phytohemagglutinin P
PMSF	phenylmethyl sulfonyl fluoride
PRS	primed responder cell
P-SRBC	papain-treated sheep red blood cell
RFC	rosette forming cells
RIA	radioimmunoassay
SDS-PAGE	sodium dodecyl sulfate-polyacrylamide gel
SLE	systemic lupus erythematosus/electrophoresis
SmIg	surface membrane immunoglobulin
SP	3-(*p*-sulfophenyldiazo)-4-hydroxyphenyl
SPA	*Staphylococcus aureus* protein A
SRBC	sheep red blood cells
SRC	sheep erythrocyte
TCA	trichloroacetic acid
TCGF	T cell growth factor
TD	thymus-dependent
TEMED	*N,N,N′,N′*-tetramethylethylenediamine
TNBS	2,4,6-trinitrobenzene sulfonic acid
TNP	trinitrophenyl
TNP-SRBC	trinitrophenyl-conjugated sheep red blood cell
Tris	Tris(hydroxymethyl)aminomethane

Contents

List of Contributors *xi*
Preface *xv*
Contents of Volume I *xvii*
Abbreviations List *xxi*

1 Determination of Equilibrium Binding Parameters of Monoclonal Antibodies Specific for Cell Surface Antigens

Massimo Trucco and Stefanello de Petris

I. Introduction 1
II. Theoretical Background 3
III. Technical Approach 5
IV. Examples 15
V. Critical Appraisal 18
VI. Appendix 24
References 26

2 Biochemical Characterization of Cell Surface Antigens Using Monoclonal Antibodies

Béla J. Takács and Theophil Staehelin

I. Introduction 27
II. Production of Antibodies 31
III. Labeling Procedures for Cell Surface Antigens 39
IV. Preparation of Cell Membranes 41
V. Analysis of Cell Surface Antigens 43
VI. Conclusion 53
References 54

3 Two-Dimensional Gel Electrophoresis

Charles Sidman

I. Introduction 57
II. One-Dimensional Sodium Dodecyl Sulfate–Polyacrylamide Gels (SDS–PAGE) 58
III. Two-Dimensional Gel Techniques 61
References 74

4 Measurements of Antibodies Specific for DNA

Lucien A. Aarden and Ruud Smeenk

I. Introduction 75
II. Antigen Preparations 76
III. Anti-DNA Assays 80
IV. Critical Appraisal 81
References 82

5 High-Pressure Liquid Chromatography of Proteins and Peptides

Vernon L. Alvarez, Carolyn A. Roitsch, and Ole Henriksen

I. Introduction 84
II. General Description of HPLC 84
III. Components of an HPLC System 87
IV. Examples of HPLC Applications 94
References 103

6 Methods in Surface Physics for Immunology

Donald F. Gerson

I. Introduction 105
II. Review of Surface Physics 108
III. Methods of Measurement 119
IV. Thin Layer Immunoassay Techniques 135
V. Conclusions 136
References 137

7 Hapten-Modified Antibodies Specific for Cell Surface Antigens as a Tool in Cellular Immunology

Salvatore Cammisuli

I. Introduction 139
II. Hapten Sandwich Labeling 140
III. Preparation of Hapten Sandwich Labeling Reagents 145
IV. Selected Examples of the Application of Hapten Sandwich Labeling Reagents 152
V. Critical Appraisal 161
References 162

8 HLA-DR Typing by Complement-Dependent B Lymphocyte Lysis

Gianni Garotta and Tauro M. Neri

I. Introduction 163
II. Principle of the Test 164
III. Details of the Test 165
IV. Modifications of the Test 173
V. Critical Appraisal 179
VI. Equipment, Supplies, and Solutions 181
References 184

9 The Protein A Plaque Assay for the Detection of Immunoglobulin-Secreting Cells

Rosa R. Bernabé, Margaretha Tuneskog, Luciana Förni, Carlos Martinez-A., Dan Holmberg, Fredrick Ivars, and António Coutinho

I. Introduction 187
II. Reagents 188
III. Cell Suspensions 194
IV. Plaquing Procedure 194
V. Counting of Plaque-Forming Cells 196
VI. General Comments 196
VII. Appendix 196
References 197

10 ***In Vitro* Production and Testing of Antigen-Induced Mediators of Helper T-Cell Function**

Sarah Howie

I. Introduction 199
II. Materials 200
III. Use of the Marbrook Culture System for Inducing Antigen-Specific Helper Supernatants 201
IV. Testing the Activity of Antigen-Specific Factors 208
V. Plaque Assay 210
VI. Summary 211
References 211

11 **A Helper Cell Assay of Cellular Antigens and Its Applications to Hapten-Specific T Cells**

Carlos Martinez-A., Andrei A. Augustin, and Antonio Coutinho

I. Introduction 213
II. Principles of the Method and Its Modifications 214
III. Materials 215
IV. Procedures 216
V. Comments 218
References 220

12 **Limiting Dilution Analysis of Precursors of Cytotoxic T Lymphocytes**

Jean Langhorne and Kirsten Fischer Lindahl

I. Principle of the Method 222
II. Materials 222
III. Methods 224
IV. Experimental Design 229
V. Analysis of the Results 229
VI. Developments of the Limiting Dilution Assay 234
VII. Limitations of the Assay 238
References 239