Contents

Preface ................................................................. v
Contributors ............................................................. ix

1 Antibody Phage Display: Overview of a Powerful Technology that Has Quickly Translated to the Clinic ...................... 1
Beatrix Kotlan and Mark C. Glassy

2 Design and Construction of Synthetic Phage-Displayed Fab Libraries ............. 17
Jenny Bostrom and Germaine Fuh

3 Affinity Isolation of Antigen-Specific Circulating B Cells for Generation of Phage Display-Derived Human Monoclonal Antibodies ............ 37
Henrik J. Ditzel

4 Construction of Phage Antibody Repertoires from the Blood of West Nile Virus-Infected Donors ..................... 45
Mark Throsby and John de Kruif

5 Anti-β₂ GP-I and Anti-prothrombin Antibodies Generated by Phage Display ......................... 61
Javier Cabiedes and Antonio R. Cabral

6 The Generation and Selection of Single-Domain, V Region Libraries from Nurse Sharks .............. 71
Martin F. Flajnik and Helen Dooley

7 The Isolation of scFvs Against Small Target Molecules ...................... 83
Iain Shaw and Marian Kane

8 Display and Selection of scFv Antibodies on HEK-293T Cells .................. 99
Mitchell Ho and Ira Pastan

9 Isolation of scFvs that Inhibit the NS3 Protease of Hepatitis C Virus by a Combination of Phage Display and a Bacterial Genetic Screen .......... 115
Limor Nahary, Alla Trahtenherts, and Itai Benhar

10 Guided Selection Methods Through Chain Shuffling .......................... 133
Bao Guo-giang and He Xian-Li

11 Sequential Antigen Panning for Selection of Broadly Cross- Reactive HIV-1-Neutralizing Human Monoclonal Antibodies .................. 143
Mei-Yun Zhang and Dimitar S. Dimitrov

12 Selection of Antibodies Able to Rapidly Enter Mammalian Cells .............. 155
Marie-Alix Poul

13 Identification of the Specificity of Isolated Phage Display Single-Chain Antibodies Using Yeast Two-Hybrid Screens ................... 165
Nicolaj Rasmussen and Henrik J. Ditzel

14 Generation of Bispecific and Tandem Diabodies ............................... 177
Sergey M. Kipriyanov
15 Intrabody Expression in Eukaryotic Cells ........................................ 195
    Laurence Guglielmi and Pierre Martineau
16 High-Level Periplasmic Expression and Purification of scFvs. ................. 205
    Sergey M. Kipriyanov
17 Expression of Single-Chain Fv Fragments in E. coli Cytoplasm ................. 215
    Laurence Guglielmi and Pierre Martineau
18 High-Level Expression of a Phage Display-Derived scFv in Pichia pastoris. ......... 225
    Leonardo M. Damasceno, Frank Lee, Gerd Ritter, Lloyd Old, and Carl Batt

Index ............................................................................................................. 237
Antibody Phage Display
Methods and Protocols
Aitken, R. (Ed.)
2009, X, 240 p. 22 illus., Hardcover
A product of Humana Press