# 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-qiang 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
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Intrabody Expression in Eukaryotic Cells</td>
<td>195</td>
</tr>
<tr>
<td></td>
<td>Laurence Guglielmi and Pierre Martineau</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>High-Level Periplasmic Expression and Purification of scFvs.</td>
<td>205</td>
</tr>
<tr>
<td></td>
<td>Sergey M. Kipriyanov</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Expression of Single-Chain Fv Fragments in <em>E. coli</em> Cytoplasm</td>
<td>215</td>
</tr>
<tr>
<td></td>
<td>Laurence Guglielmi and Pierre Martineau</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>High-Level Expression of a Phage Display-Derived scFv in <em>Pichia pastoris</em>.</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>Leonardo M. Damasceno, Frank Lee, Gerd Ritter, Lloyd Old, and Carl Batt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>237</td>
</tr>
</tbody>
</table>
Antibody Phage Display
Methods and Protocols
Aitken, R. (Ed.)
2009, X, 240 p. 22 illus., Hardcover
A product of Humana Press