
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>xi</i>
PART I REVIEW	
1 Ribosome Display: A Perspective <i>Andreas Plückthun</i>	3
PART II TRANSLATION EXTRACT PREPARATION	
2 Preparation and Testing of <i>E. coli</i> S30 In Vitro Transcription Translation Extracts <i>James F. Zawada</i>	31
PART III BASIC RIBOSOME DISPLAY AND RELATED SELECTION METHODS	
3 Eukaryotic Ribosome Display Selection Using Rabbit Reticulocyte Lysate. <i>Julie A. Douthwaite</i>	45
4 Stabilized Ribosome Display for In Vitro Selection <i>Shuta Hara, Mingzhe Liu, Wei Wang, Muye Xu, Zha Li, and Yoshihiro Ito</i>	59
5 Eukaryotic Ribosome Display with In Situ DNA Recovery <i>Mingyue He, Bryan M. Edwards, Damjana Kastelic, and Michael J. Taussig</i>	75
6 mRNA Display Using Covalent Coupling of mRNA to Translated Proteins. <i>Rong Wang, Steve W. Cotten, and Rihe Liu</i>	87
7 SNAP Display: In Vitro Protein Evolution in Microdroplets <i>Miriam Kaltenbach and Florian Hollfelder</i>	101
8 cDNA Display: Rapid Stabilization of mRNA Display <i>Shingo Ueno and Naoto Nemoto</i>	113
PART IV APPLICATIONS OF RIBOSOME DISPLAY METHODS USING NATURAL AMINO ACIDS	
9 Optimisation of Antibody Affinity by Ribosome Display Using Error-Prone or Site-Directed Mutagenesis <i>Leeanne Lewis and Chris Lloyd</i>	139
10 Affinity Maturation of Phage Display Antibody Populations Using Ribosome Display. <i>Maria A. Groves and Adrian A. Nickson</i>	163

11	Evolution of Protein Stability Using Ribosome Display	191
	<i>Andrew Buchanan</i>	
12	Selection of Lead Antibodies from Naive Ribosome Display Antibody Libraries	213
	<i>Peter Ravn</i>	
13	Evolution of Disulfide-Rich Peptide Aptamers Using cDNA Display	237
	<i>Yuki Mochizuki and Naoto Nemoto</i>	
14	Peptide Screening Using PURE Ribosome Display	251
	<i>Hiroyuki Ohashi, Takashi Kanamori, Eriko Osada, Bintang K. Akbar, and Takuya Ueda</i>	
15	Rapid Selection of High-Affinity Binders Using Ribosome Display	261
	<i>Birgit Dreier and Andreas Plückthun</i>	
16	mRNA Display-Based Selections Using Synthetic Peptide and Natural Protein Libraries	287
	<i>Steve W. Cotten, Jianwei Zou, Rong Wang, Bao-cheng Huang, and Rihe Liu</i>	
17	Identification of Candidate Vaccine Genes Using Ribosome Display	299
	<i>Liancheng Lei</i>	
18	Ribosome Display for the Selection of Sac7d Scaffolds	315
	<i>Barbara Mouratou, Ghislaine Béhar, Laurantine Paillard-Laurance, Stéphane Colinet, and Frédéric Pecorari</i>	
PART V INCORPORATION OF NON-NATURAL AMINO ACIDS FOR SELECTION BY RIBOSOME DISPLAY AND RELATED METHODS		
19	Charging of tRNAs Using Ribozymes and Selection of Cyclic Peptides Containing Thioethers	335
	<i>Patrick C. Reid, Yuki Goto, Takayuki Katoh, and Hiroaki Suga</i>	
20	Update on Pure Translation Display with Unnatural Amino Acid Incorporation	349
	<i>R. Edward Watts and Anthony C. Forster</i>	
21	In Vitro Selection of Unnatural Cyclic Peptide Libraries via mRNA Display	367
	<i>Zhong Ma and Matthew C.T. Hartman</i>	
PART VI CASE STUDIES		
22	Optimization of CAT-354, a Therapeutic Antibody Directed Against Interleukin-13, Using Ribosome Display	393
	<i>George Thom and Ralph Minter</i>	
23	Affinity Maturation and Functional Dissection of a Humanised Anti-RAGE Monoclonal Antibody by Ribosome Display.	403
	<i>Simon E. Hufton</i>	
	<i>Index</i>	423



<http://www.springer.com/978-1-61779-378-3>

Ribosome Display and Related Technologies
Methods and Protocols

Douthwaite, J.A.; Jackson, R.H. (Eds.)

2012, XIII, 424 p., Hardcover

ISBN: 978-1-61779-378-3

A product of Humana Press