
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>xiii</i>
1 Purification of Large Cytosolic Proteases for In Vitro Assays: 20S and 26S Proteasomes	1
<i>Stefan Tenzer, Tobias Hain, Hendrik Berger, and Hansjörg Schild</i>	
2 Analysis of Proteasome Generated Antigenic Peptides by Mass Spectrometry.	15
<i>Kathrin Textoris-Taube, Christin Keller, Ulrike Kuckelkorn, and Peter-M. Kloetzel</i>	
3 Using Protease Inhibitors in Antigen Presentation Assays	31
<i>Michael Basler and Marcus Groettrup</i>	
4 Kinetic Studies of Cytoplasmic Antigen Processing and Production of MHC Class I Ligands	41
<i>Anita Stargardt and Eric Reits</i>	
5 Assaying Peptide Translocation by the Peptide Transporter TAP	53
<i>Marlieke L.M. Jongsma and Jacques Neefjes</i>	
6 In Vitro Reconstitution of the MHC Class I Peptide-Loading Complex	67
<i>Pamela A. Wearsch and Peter Cresswell</i>	
7 Studying MHC Class I Peptide Loading and Exchange In vitro	81
<i>Marlene Bouvier</i>	
8 Measuring Synthesis and Degradation of MHC Class I Molecules.	93
<i>David B. Guiliano and Antony N. Antoniou</i>	
9 Studying Ubiquitination of MHC Class I Molecules.	109
<i>Marian L. Burr, Jessica M. Boname, and Paul J. Lehner</i>	
10 Evaluation of Viral Interference with MHC Class I-Restricted Antigen Processing and Presentation Using a Flow Cytometry-Based Approach	127
<i>Daniëlle Horst, Maaike E. Rensing, Arend Mulder, and Emmanuel J.H.J. Wiertz</i>	
11 Determining the Activity of the Transporter Associated with Antigen Processing in the Compartments of the Secretory Pathway.	137
<i>Esther Ghanem and Sebastian Springer</i>	
12 Biochemical Large-Scale Identification of MHC Class I Ligands	145
<i>Daniel J. Kowalewski and Stefan Stevanović</i>	
13 Establishing MHC Class I Peptide Motifs.	159
<i>Nico Trautwein and Stefan Stevanović</i>	
14 Quantitating MHC Class I Ligand Production and Presentation Using TCR-Like Antibodies	169
<i>Brian P. Dolan</i>	

15	Biochemical Analysis of Naturally Processed Antigenic Peptides Presented by MHC Class I Molecules	179
	<i>Takayuki Kanaseki and Nilabh Shastri</i>	
16	Identifying Source Proteins for MHC Class I-Presented Peptides	187
	<i>Nathalie Vigneron, Wenbin Ma, Alexandre Michaux, and Benoît J. Van den Eynde</i>	
17	Purification, Preparation, and Use of Chaperone–Peptide Complexes for Tumor Immunotherapy	209
	<i>Ayesha Murshid, Jianlin Gong, and Stuart K. Calderwood</i>	
18	Recombinant Poxviruses: Versatile Tools for Immunological Assays	219
	<i>Nicholas A. Siciliano, Lan Huang, and Laurence C. Eisenlohr</i>	
19	Bioinformatics Identification of Antigenic Peptide: Predicting the Specificity of Major MHC Class I and II Pathway Players	247
	<i>Ole Lund, Edita Karosiene, Claus Lundegaard, Mette Voldby Larsen, and Morten Nielsen</i>	
20	Evaluating CD8 ⁺ T Cell Responses In Vitro	261
	<i>François A. Lemonnier</i>	
21	Cloning CD8 ⁺ Cytolytic T Lymphocytes	279
	<i>François A. Lemonnier</i>	
22	Production of CD4 ⁺ and CD8 ⁺ T Cell Hybridomas	297
	<i>David H. Canaday</i>	
23	Tracking Antigen-Specific CD8 ⁺ T Cells Using MHC Class I Multimers	309
	<i>Cécile Alanio, Isabelle Bouvier, Hélène Jusforgues-Saklani, and Matthew L. Albert</i>	
24	The Purification of Large Numbers of Antigen Presenting Dendritic Cells from Mouse Spleen	327
	<i>David Vremec and Elodie Segura</i>	
25	Preparation of Dendritic Cells by In Vitro Cultures	351
	<i>Mirjana Weimershaus and Peter van Endert</i>	
26	Monitoring Dendritic Cell Activation and Maturation	359
	<i>Ben Fancke and Meredith O’Keeffe</i>	
27	Monitoring the Intracellular Routing of Internalized Antigens by Immunofluorescence Microscopy	371
	<i>Lars Franken, Christian Kurts, and Sven Burgdorf</i>	
28	Isolation of a Specialized, Antigen-Loaded Early Endosomal Subpopulation by Flow Cytometry	379
	<i>Achmet Imam Chasan, Marc Beyer, Christian Kurts, and Sven Burgdorf</i>	
29	Preparing Antigens Suitable for Cross-presentation Assays In Vitro and In Vivo	389
	<i>Loredana Saveanu and Peter van Endert</i>	
30	Gene Transduction in Human Monocyte-Derived Dendritic Cells Using Lentiviral Vectors	401
	<i>Takeshi Satoh and Nicolas Manel</i>	

31	Pulse–Chase Analysis for Studies of MHC Class II Biosynthesis, Maturation, and Peptide Loading	411
	<i>Tieying Hou, Cornelia H. Rinderknecht, Andreas V. Hadjinicolaou, Robert Busch, and Elizabeth Mellins</i>	
32	Assembly of Matched Alpha/Beta Subunits to HLA Class II Peptide Receptors	433
	<i>Sebastian Temme, Nadine Kämper, and Norbert Koch</i>	
33	Studying MHC Class II Peptide Loading and Editing In Vitro	447
	<i>AeRyon Kim, Isabel Ishizuka, Isamu Hartman, Yuri Poluektov, Kedar Narayan, and Scheherazade Sadegh-Nasseri</i>	
34	Study of the Allogeneic Response Induced by Endothelial Cells Expressing HLA Class II After Lentiviral Transduction	461
	<i>Cécile Taflin, Benoit Favier, Dominique Charron, Denis Glotz, and Nuala Mooney</i>	
35	Antigen Processing for MHC Presentation via Macroautophagy	473
	<i>Monique Gannage, Rosa Barreira da Silva, and Christian Münz</i>	
36	Studying MHC Class II Transport in Dendritic Cells	489
	<i>Petra Paul and Jacques Neefjes</i>	
37	In Vitro Digestion with Proteases Producing MHC Class II Ligands	509
	<i>Mira Tohmé, Sophia Maschalidi, and Bénédicte Manoury</i>	
38	MHC II Ubiquitination	517
	<i>Aude De Gassart, Francesca De Angelis Rigotti, and Evelina Gatti</i>	
39	Studying MHC class II Presentation of Immobilized Antigen by B Lymphocytes	529
	<i>M.I. Yuseff and A.M. Lennon-Dumenil</i>	
40	Production of Primary Human CD4 ⁺ T Cell Lines and Clones	545
	<i>Jessica Matthis and Helena Reijonen</i>	
41	Analyzing Antigen Recognition by Natural Killer T Cells	557
	<i>Sebastian Zeissig, Torsten Olszak, Espen Melum, and Richard S. Blumberg</i>	
42	Chromatofocusing Purification of CD1b–Antigen Complexes and Their Analysis by Isoelectric Focusing.	573
	<i>Luis Fernando Garcia-Alles and Henri de la Salle</i>	
	<i>Index</i>	585

Antigen Processing

Methods and Protocols

van Endert, P. (Ed.)

2013, XVII, 589 p. 85 illus., 25 illus. in color., Hardcover

ISBN: 978-1-62703-217-9

A product of Humana Press