

**PENSUM FOR MBV 4240/9240 -2012**

Fra **Molecular Biology of the Cell**, Fifth Edition (Alberts, B. et al., eds.) 2008, Garland Science, New York and London.

Membrane Structure (Chapter 10), p. 617-640 (to Bacteriorhodopsin) (24 pages)  
 p. 642-646 (to The cortical cytoskeleton) (5 pages)  
 p. 648 summary (0.5 pages)

Intracellular Compartments and Protein Sorting (Chapter 12), p 695-697 (to Evolutionary..)  
 (2.5 pages)  
 699 (proteins can move)-702 (most org) (3 pages)  
 704 (The transport of molecules)-710 (during mitosis) (6.5 pages)  
 723 (The endoplasmic reticulum)-746 (problems) (23 pages)

Intracellular Vesicular Traffic (Chapter 13) 749- 764 (viral fusion proteins) (16.5 pages)  
 766 (Summary)- 813 (48 pages)

Mechanisms of cell communication (Chapter 15) 891 (the three largest classes)-899 (cells can use multiple) (8 pages)  
 904-916 (som G proteins directly regulate ion channels) (13 pages)

The cytoskeleton (Chapter 16) 965-976 (to Filament threadmilling (12.5 pages)  
 987 (drugs can alter)- 989(to Bacterial Cell org.) (1.5 pages)  
 1009 (cytoskeletal elements)-1022 (The Cytoskeleton localizes..) (14 pages)

Total number of pages from the textbook: 178 pages

**Membrane composition (including lipids) and fusion/fission**

Membrane rafting: From apical sorting to phase segregation (Coskun, Ü. And Simons, K. FEBS letters 584 (2010) 1685-1693 (7 pages)).

First steps to rafts? (John R. Silvius, Nature Chem. Biol. 8 (2012) 743-744 (2 pages)).

Interplay of proteins and lipids in generating membrane curvature (Graham, T.R. and Kozlov, M.M. Curr.Opin. Cell Biol. 22 (2010)430-435 (5 pages)).

Bending membranes (Kirchhausen, T., Nature Cell Biol. 14 (Sept. 2012) 906-908 (3 pages)).

**Endocytosis**

Molecular mechanisms and physiological functions of clathrin-mediated endocytosis (McMahon, H.T. and Boucrot, E., Nature Reviews, Mol.Cell Biol. 12 (Aug. 2011) 517-533 (12 pages)).

Fishing for clathrin-coated pit nucleators (Christien J. Merrifield, Nature Cell Biol. 14 (2012) 452-454 (3 pages)).

Clathrin-independent endocytosis: mechanisms and function (Sandvig, K. et al. Curr. Opin. Cell Biol. 23(2011)413-420 (6 pages)).

Caveolae at a glance (Bastiani, M. and Parton, R.G. J. Cell Sci. 123 (Nov. 2010) 3831-3836 (4 pages)).

Stressing caveolae new role in cell mechanics (Nassoy, P. and Lamaze, C., Trends Cell Biol. 22 (2012) 381-389 (7 pages)).

Macropinocytosis : an endocytic pathway for internalizing large gulps (Lim, J.P. and Gleeson, P.A. Immunol and Cell Biol (2011)1- (6 pages)).

Phagocytosis here and now (Sergio Grinstein, Traffic 13 (2012) 1041 (1 page)).

### **Exosomes**

Exosome Explosion (Clotilde Théry, <http://the-scientist.com/2011/07/01/exosome-explosion/> (5 pages)).

### **Autophagosomes**

Mechanisms of autophagosome biogenesis (Rubinsztein, D.C., Shpilka, T., and Elazar, Z. Current Biology 22 (2012) R29-R34 (5 pages)).

### **Endosomal coat proteins and sorting**

Structures and mechanisms of vesicle coat components and multisubunit tethering complexes (Jackson, L.P., Kümmel, D., Reinisch, K. and Owen D.J., Curr. Opin. Cell Biol. 24 (2012) 475-483 (6 pages)).

Rab GTPases as coordinators of vesicle traffic (Stenmark, H. Nature Reviews Molecular Biology 10 (2009) 513-525 (11 pages)).

Sorting nexins provide diversity for retromer-dependent trafficking events (Peter J. Cullen and Hendrik C. Korswagen, Nature Cell Biol. 14 (2012) 29-37 (7pages)).

Getting active: protein sorting in endocytic recycling (Victor W. Hsu and Jian Li, Nature Reviews, Molecular Cell Biology 13 (2012) 323-328 (5 pages)).

MVB vesicle formation: ESCRT-dependent, ESCRT-independent and everything in between (Babst, M. Curr Opin Cell Biol. 23 (2011) 452-457 (5 sider)).

**Endoplasmic reticulum and ER-Golgi transport**

Protein translocation across the ER membrane (Zimmermann, R., Eyrich, S., Ahmad, M. and Helms, V. *Biochim.Biophys.Acta* (2010) ahead of publ. (6 pages)).

Finding the will and the way of ERAD substrate retrotranslocation (Hampton, R.Y. and Sommer, T., *Curr. Opin. Cell Biol.* 24 (2012) 460-466 (5 pages))

COPII and the regulation of protein sorting in mammals (Zanetti, G., Pahuja K.B., Studer, S., Him, S. and Schekman, R. *Nature Cell Biol.* 14 (2012) 20-28 (7 pages)).

**Golgi and sorting from the Golgi**

Re´COGnition at the Golgi (Victoria J. Miller and Daniel Ungar, *Traffic* 13 (2012) 891-897 (6 sider)).

Coordination of Golgi functions by phosphatidylinositol 4 kinases (Graham, T.R. and Burd, C.G. *Trends Cell Biol.* 2(2011) 113-121(5 pages)).

Exit from the trans-Golgi network: from molecules to mechanisms (Anitei, M. and Hoflack, B. *Curr. Opin. Cell Biol.* 23 (2011) 443-451 (7 pages)).

Modular organization of the Golgi apparatus (Nakamura, N., Wei, J.-H., and Seemann, J. *Curr. Opin. Cell Biol.* 24 (2012) 467-474 (5 pages)).

**Toxins**

Protein toxins from plants and bacteria: Probes for intracellular transport and tools in medicine (Sandvig, K. et al. *FEBS Letters* 584(2010) 2626-2634 (7 pages)).