

CELL3050: Advanced Molecular Cell Biology

And CELL3050A

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1.

Alberts, Bruce: Molecular biology of the cell. Garland Science, Abingdon (2008).

2.

Pollard, Thomas D., Earnshaw, William C.: Cell biology. Saunders/Elsevier, Philadelphia (2008).

3.

Lodish, Harvey F.: Molecular cell biology. Palgrave Macmillan, Basingstoke (2007).

4.

Alberts, Bruce: Essential cell biology. Garland Science, London (2010).

5.

iBioSeminars: Free biology videos online.

6.

Giepmans, B.N.G.: The Fluorescent Toolbox for Assessing Protein Location and Function. Science. 312, 217–224 (2006). <https://doi.org/10.1126/science.1124618>.

7.

North, A.J.: Seeing is believing? A beginners' guide to practical pitfalls in image acquisition. *The Journal of Cell Biology*. 172, 9–18 (2006). <https://doi.org/10.1083/jcb.200507103>.

8.

Shaner, N.C., Steinbach, P.A., Tsien, R.Y.: A guide to choosing fluorescent proteins. *Nature Methods*. 2, 905–909 (2005). <https://doi.org/10.1038/nmeth819>.

9.

Molecular Probes®, Labeling & Detection Technologies | Life Technologies.

10.

Nikon MicroscopyU.

11.

Pelkmans, L.: Using Cell-to-Cell Variability--A New Era in Molecular Biology. *Science*. 336, 425–426 (2012). <https://doi.org/10.1126/science.1222161>.

12.

Larson, D.R., Zenklusen, D., Wu, B., Chao, J.A., Singer, R.H.: Real-Time Observation of Transcription Initiation and Elongation on an Endogenous Yeast Gene. *Science*. 332, 475–478 (2011). <https://doi.org/10.1126/science.1202142>.

13.

Raj, A., van Oudenaarden, A.: Nature, Nurture, or Chance: Stochastic Gene Expression and Its Consequences. *Cell*. 135, 216–226 (2008). <https://doi.org/10.1016/j.cell.2008.09.050>.

14.

Brock, A., Chang, H., Huang, S.: Non-genetic heterogeneity — a mutation-independent driving force for the somatic evolution of tumours. *Nature Reviews Genetics*. 10, 336–342 (2009). <https://doi.org/10.1038/nrg2556>.

15.

Lionnet, T., Singer, R.H.: Transcription goes digital. *EMBO reports*. 13, 313–321 (2012). <https://doi.org/10.1038/embo.2012.31>.

16.

Spencer, S.L., Gaudet, S., Albeck, J.G., Burke, J.M., Sorger, P.K.: Non-genetic origins of cell-to-cell variability in TRAIL-induced apoptosis. *Nature*. 459, 428–432 (2009). <https://doi.org/10.1038/nature08012>.

17.

Morgan, David Owen: The cell cycle: principles of control. New Science Press in association with Oxford University Press and Sinauer Associates, London (2007).

18.

Watson, James D.: Molecular biology of the gene. Pearson/Benjamin Cummings, Cold Spring Harbor, N.Y. (2008).

19.

Alberts, Bruce: Molecular biology of the cell. Garland Science, Abingdon (2008).

20.

Murray, Andrew Wood, Hunt, Tim: The cell cycle: an introduction. Oxford University Press, New York (1993).

21.

Evans, T., Rosenthal, E.T., Youngblom, J., Distel, D., Hunt, T.: Cyclin: A protein specified by maternal mRNA in sea urchin eggs that is destroyed at each cleavage division. *Cell*. 33, 389–396 (1983). [https://doi.org/10.1016/0092-8674\(83\)90420-8](https://doi.org/10.1016/0092-8674(83)90420-8).

22.

Hartwell, L.H.: Twenty-five years of cell cycle genetics. *Genetics*. 129, 975–980 (1991).

23.

Bartek, J., Lukas, J.: DNA damage checkpoints: from initiation to recovery or adaptation. *Current Opinion in Cell Biology*. 19, 238–245 (2007).
<https://doi.org/10.1016/j.ceb.2007.02.009>.

24.

Nasmyth, K., Schleiffer, A.: From a single double helix to paired double helices and back. *Philosophical Transactions of the Royal Society B: Biological Sciences*. 359, 99–108 (2004).
<https://doi.org/10.1098/rstb.2003.1417>.

25.

Ted A. Weinert and Leland H. Hartwell: The RAD9 Gene Controls the Cell Cycle Response to DNA Damage in *Saccharomyces cerevisiae*. *Science*. 241, 317–322 (1988).

26.

Howell, B.J., Hoffman, D.B., Fang, G., Murray, A.W., Salmon, E.D.: Visualization of Mad2 Dynamics at Kinetochores, along Spindle Fibers, and at Spindle Poles in Living Cells. *The Journal of Cell Biology*. 150, 1233–1250 (2000). <https://doi.org/10.1083/jcb.150.6.1233>.

27.

Musacchio, A., Salmon, E.D.: The spindle-assembly checkpoint in space and time. *Nature Reviews Molecular Cell Biology*. 8, 379–393 (2007). <https://doi.org/10.1038/nrm2163>.

28.

Alberts, Bruce: *Molecular biology of the cell*. Garland Science, Abingdon (2008).

29.

Nature Publishing Group: Encyclopedia of life sciences. Macmillan, Basingstoke (2001).

30.

Milestones timeline : Nature Milestones in Cytoskeleton.

31.

Julie Theriot.

32.

Windoffer, R., Beil, M., Magin, T.M., Leube, R.E.: Cytoskeleton in motion: the dynamics of keratin intermediate filaments in epithelia. *The Journal of Cell Biology*. 194, 669–678 (2011). <https://doi.org/10.1083/jcb.201008095>.

33.

Simon, D.N., Wilson, K.L.: The nucleoskeleton as a genome-associated dynamic 'network of networks'. *Nature Reviews Molecular Cell Biology*. 12, 695–708 (2011). <https://doi.org/10.1038/nrm3207>.

34.

Ridley, A.J.: Life at the Leading Edge. *Cell*. 145, 1012–1022 (2011). <https://doi.org/10.1016/j.cell.2011.06.010>.

35.

Campellone, K.G., Welch, M.D.: A nucleator arms race: cellular control of actin assembly. *Nature Reviews Microbiology*. 11, 237–251 (2010). <https://doi.org/10.1038/nrm2867>.

36.

Pollard, T.D., Borisy, G.G.: Cellular Motility Driven by Assembly and Disassembly of Actin Filaments. *Cell*. 112, 453–465 (2003). [https://doi.org/10.1016/S0092-8674\(03\)00120-X](https://doi.org/10.1016/S0092-8674(03)00120-X).

37.

Chhabra, E.S., Higgs, H.N.: The many faces of actin: matching assembly factors with cellular structures. *Nature Cell Biology*. 9, 1110–1121 (2007).
<https://doi.org/10.1038/ncb1007-1110>.

38.

Insall, R.H., Machesky, L.M.: Actin Dynamics at the Leading Edge: From Simple Machinery to Complex Networks. *Developmental Cell*. 17, 310–322 (2009).
<https://doi.org/10.1016/j.devcel.2009.08.012>.

39.

VANTROYS, M., HUYCK, L., LEYMAN, S., DHAESE, S., VANDEKERKHOVE, J., AMPE, C.: Ins and outs of ADF/cofilin activity and regulation. *European Journal of Cell Biology*. 87, 649–667 (2008). <https://doi.org/10.1016/j.ejcb.2008.04.001>.

40.

Herrmann, H., Strelkov, S.V., Burkhard, P., Aebi, U.: Intermediate filaments: primary determinants of cell architecture and plasticity. *Journal of Clinical Investigation*. 119, 1772–1783 (2009). <https://doi.org/10.1172/JCI38214>.

41.

Goldman, R.D., Grin, B., Mendez, M.G., Kuczmarski, E.R.: Intermediate filaments: versatile building blocks of cell structure. *Current Opinion in Cell Biology*. 20, 28–34 (2008).
<https://doi.org/10.1016/j.ceb.2007.11.003>.

42.

Herrmann, H., Bär, H., Kreplak, L., Strelkov, S.V., Aebi, U.: Intermediate filaments: from cell architecture to nanomechanics. *Nature Reviews Molecular Cell Biology*. 8, 562–573 (2007).
<https://doi.org/10.1038/nrm2197>.

43.

Godsel, L.M., Hobbs, R.P., Green, K.J.: Intermediate filament assembly: dynamics to disease. *Trends in Cell Biology*. 18, 28–37 (2008).

<https://doi.org/10.1016/j.tcb.2007.11.004>.

44.

Delorme, V., Machacek, M., DerMardirossian, C., Anderson, K.L., Wittmann, T., Hanein, D., Waterman-Storer, C., Danuser, G., Bokoch, G.M.: Cofilin Activity Downstream of Pak1 Regulates Cell Protrusion Efficiency by Organizing Lamellipodium and Lamella Actin Networks. *Developmental Cell*. 13, 646–662 (2007).
<https://doi.org/10.1016/j.devcel.2007.08.011>.

45.

Symons, M.H.: Control of actin polymerization in live and permeabilized fibroblasts. *The Journal of Cell Biology*. 114, 503–513 (1991). <https://doi.org/10.1083/jcb.114.3.503>.

46.

Miyoshi, T., Tsuji, T., Higashida, C., Hertzog, M., Fujita, A., Narumiya, S., Scita, G., Watanabe, N.: Actin turnover-dependent fast dissociation of capping protein in the dendritic nucleation actin network: evidence of frequent filament severing. *The Journal of Cell Biology*. 175, 947–955 (2006). <https://doi.org/10.1083/jcb.200604176>.

47.

Lee, C.-H., Coulombe, P.A.: Self-organization of keratin intermediate filaments into cross-linked networks. *The Journal of Cell Biology*. 186, 409–421 (2009).
<https://doi.org/10.1083/jcb.200810196>.

48.

Colakoglu, G., Brown, A.: Intermediate filaments exchange subunits along their length and elongate by end-to-end annealing. *The Journal of Cell Biology*. 185, 769–777 (2009).
<https://doi.org/10.1083/jcb.200809166>.

49.

Akin, O., Mullins, R.D.: Capping Protein Increases the Rate of Actin-Based Motility by Promoting Filament Nucleation by the Arp2/3 Complex. *Cell*. 133, 841–851 (2008).
<https://doi.org/10.1016/j.cell.2008.04.011>.

50.

Chen, C.-Y., Chi, Y.-H., Mutalif, R.A., Starost, M.F., Myers, T.G., Anderson, S.A., Stewart, C.L., Jeang, K.-T.: Accumulation of the Inner Nuclear Envelope Protein Sun1 Is Pathogenic in Progeric and Dystrophic Laminopathies. *Cell*. 149, 565–577 (2012). <https://doi.org/10.1016/j.cell.2012.01.059>.

51.

Chang, L., Barlan, K., Chou, Y.-H., Grin, B., Lakonishok, M., Serpinskaya, A.S., Shumaker, D.K., Herrmann, H., Gelfand, V.I., Goldman, R.D.: The dynamic properties of intermediate filaments during organelle transport. *Journal of Cell Science*. 122, 2914–2923 (2009). <https://doi.org/10.1242/jcs.046789>.

52.

Helfand, B.T., Mendez, M.G., Murthy, S.N.P., Shumaker, D.K., Grin, B., Mahammad, S., Aebi, U., Wedig, T., Wu, Y.I., Hahn, K.M., Inagaki, M., Herrmann, H., Goldman, R.D.: Vimentin organization modulates the formation of lamellipodia. *Molecular Biology of the Cell*. 22, 1274–1289 (2011). <https://doi.org/10.1091/mbc.E10-08-0699>.

53.

Ura, S., Pollitt, A.Y., Veltman, D.M., Morrice, N.A., Machesky, L.M., Insall, R.H.: Pseudopod Growth and Evolution during Cell Movement Is Controlled through SCAR/WAVE Dephosphorylation. *Current Biology*. 22, 553–561 (2012). <https://doi.org/10.1016/j.cub.2012.02.020>.

54.

Siton, O., Ideses, Y., Albeck, S., Unger, T., Bershadsky, A.D., Gov, N.S., Bernheim-Groswasser, A.: Cortactin Releases the Brakes in Actin- Based Motility by Enhancing WASP-VCA Detachment from Arp2/3 Branches. *Current Biology*. 21, 2092–2097 (2011). <https://doi.org/10.1016/j.cub.2011.11.010>.

55.

Suraneni, P., Rubinstein, B., Unruh, J.R., Durnin, M., Hanein, D., Li, R.: The Arp2/3 complex is required for lamellipodia extension and directional fibroblast cell migration. *The Journal of Cell Biology*. 197, 239–251 (2012). <https://doi.org/10.1083/jcb.201112113>.

56.

Bordeleau, F., Myrand Lapierre, M.-E., Sheng, Y., Marceau, N.: Keratin 8/18 Regulation of Cell Stiffness-Extracellular Matrix Interplay through Modulation of Rho-Mediated Actin Cytoskeleton Dynamics. *PLoS ONE*. 7, (2012).
<https://doi.org/10.1371/journal.pone.0038780>.

57.

DANIAL, N.: Cell Death Critical Control Points. *Cell*. 116, 205–219 (2004).
[https://doi.org/10.1016/S0092-8674\(04\)00046-7](https://doi.org/10.1016/S0092-8674(04)00046-7).

58.

Pop, C., Salvesen, G.S.: Human Caspases: Activation, Specificity, and Regulation. *Journal of Biological Chemistry*. 284, 21777–21781 (2009). <https://doi.org/10.1074/jbc.R800084200>.

59.

Chipuk, J.E., Moldoveanu, T., Llambi, F., Parsons, M.J., Green, D.R.: The BCL-2 Family Reunion. *Molecular Cell*. 37, 299–310 (2010). <https://doi.org/10.1016/j.molcel.2010.01.025>.

60.

Fuchs, Y., Steller, H.: Programmed Cell Death in Animal Development and Disease. *Cell*. 147, 742–758 (2011). <https://doi.org/10.1016/j.cell.2011.10.033>.

61.

Liu, X., Kim, C.N., Yang, J., Jemmerson, R., Wang, X.: Induction of Apoptotic Program in Cell-Free Extracts: Requirement for dATP and Cytochrome c. *Cell*. 86, 147–157 (1996).
[https://doi.org/10.1016/S0092-8674\(00\)80085-9](https://doi.org/10.1016/S0092-8674(00)80085-9).

62.

DATTA, S.: Akt Phosphorylation of BAD Couples Survival Signals to the Cell-Intrinsic Death

Machinery. *Cell*. 91, 231–241 (1997). [https://doi.org/10.1016/S0092-8674\(00\)80405-5](https://doi.org/10.1016/S0092-8674(00)80405-5).

63.

Brunet, A., Bonni, A., Zigmond, M.J., Lin, M.Z., Juo, P., Hu, L.S., Anderson, M.J., Arden, K.C., Blenis, J., Greenberg, M.E.: Akt Promotes Cell Survival by Phosphorylating and Inhibiting a Forkhead Transcription Factor. *Cell*. 96, 857–868 (1999). [https://doi.org/10.1016/S0092-8674\(00\)80595-4](https://doi.org/10.1016/S0092-8674(00)80595-4).

64.

Whitfield, J., Neame, S.J., Paquet, L., Bernard, O., Ham, J.: Dominant-Negative c-Jun Promotes Neuronal Survival by Reducing BIM Expression and Inhibiting Mitochondrial Cytochrome c Release. *Neuron*. 29, 629–643 (2001). [https://doi.org/10.1016/S0896-6273\(01\)00239-2](https://doi.org/10.1016/S0896-6273(01)00239-2).

65.

Oltersdorf, T., Elmore, S.W., Shoemaker, A.R., Armstrong, R.C., Augeri, D.J., Belli, B.A., Bruncko, M., Deckwerth, T.L., Dinges, J., Hajduk, P.J., Joseph, M.K., Kitada, S., Korsmeyer, S.J., Kunzer, A.R., Letai, A., Li, C., Mitten, M.J., Nettesheim, D.G., Ng, S., Nimmer, P.M., O'Connor, J.M., Oleksijew, A., Petros, A.M., Reed, J.C., Shen, W., Tahir, S.K., Thompson, C.B., Tomaselli, K.J., Wang, B., Wendt, M.D., Zhang, H., Fesik, S.W., Rosenberg, S.H.: An inhibitor of Bcl-2 family proteins induces regression of solid tumours. *Nature*. 435, 677–681 (2005). <https://doi.org/10.1038/nature03579>.

66.

Wright, K.M., Vaughn, A.E., Deshmukh, M.: Apoptosome dependent caspase-3 activation pathway is non-redundant and necessary for apoptosis in sympathetic neurons. *Cell Death and Differentiation*. 14, 625–633 (2006). <https://doi.org/10.1038/sj.cdd.4402024>.

67.

Hübner, A., Barrett, T., Flavell, R.A., Davis, R.J.: Multisite Phosphorylation Regulates Bim Stability and Apoptotic Activity. *Molecular Cell*. 30, 415–425 (2008). <https://doi.org/10.1016/j.molcel.2008.03.025>.

68.

Gavathiotis, E., Suzuki, M., Davis, M.L., Pitter, K., Bird, G.H., Katz, S.G., Tu, H.-C., Kim, H., Cheng, E.H.-Y., Tjandra, N., Walensky, L.D.: BAX activation is initiated at a novel interaction site. *Nature*. 455, 1076–1081 (2008). <https://doi.org/10.1038/nature07396>.

69.

Johnson, C.H.: Circadian clocks and cell division. *Cell Cycle*. 9, 3864–3873 (2010). <https://doi.org/10.4161/cc.9.19.13205>.

70.

Vatine, G., Vallone, D., Gothilf, Y., Foulkes, N.S.: It's time to swim! Zebrafish and the circadian clock. *FEBS Letters*. 585, 1485–1494 (2011). <https://doi.org/10.1016/j.febslet.2011.04.007>.

71.

Tamai, T.K., Young, L.C., Cox, C.A., Whitmore, D.: Light Acts on the Zebrafish Circadian Clock to Suppress Rhythmic Mitosis and Cell Proliferation. *Journal of Biological Rhythms*. 27, 226–236 (2012). <https://doi.org/10.1177/0748730412440861>.

72.

Idda, M.L., Kage, E., Lopez-Olmeda, J.F., Mracek, P., Foulkes, N.S., Vallone, D.: Circadian Timing of Injury-Induced Cell Proliferation in Zebrafish. *PLoS ONE*. 7, (2012). <https://doi.org/10.1371/journal.pone.0034203>.

73.

Dong, G., Yang, Q., Wang, Q., Kim, Y.-I., Wood, T.L., Osteryoung, K.W., van Oudenaarden, A., Golden, S.S.: Elevated ATPase Activity of KaiC Applies a Circadian Checkpoint on Cell Division in *Synechococcus elongatus*. *Cell*. 140, 529–539 (2010). <https://doi.org/10.1016/j.cell.2009.12.042>.

74.

Dickmeis, T., Lahiri, K., Nica, G., Vallone, D., Santoriello, C., Neumann, C.J., Hammerschmidt, M., Foulkes, N.S.: Glucocorticoids Play a Key Role in Circadian Cell Cycle Rhythms. *PLoS Biology*. 5, (2007). <https://doi.org/10.1371/journal.pbio.0050078>.

75.

Dekens, M.P.S., Santoriello, C., Vallone, D., Grassi, G., Whitmore, D., Foulkes, N.S.: Light Regulates the Cell Cycle in Zebrafish. *Current Biology*. 13, 2051–2057 (2003). <https://doi.org/10.1016/j.cub.2003.10.022>.

76.

Matsuo, T.: Control Mechanism of the Circadian Clock for Timing of Cell Division in Vivo. *Science*. 302, 255–259 (2003). <https://doi.org/10.1126/science.1086271>.

77.

Baker, D.J., Wijshake, T., Tchkonia, T., LeBrasseur, N.K., Childs, B.G., van de Sluis, B., Kirkland, J.L., van Deursen, J.M.: Clearance of p16Ink4a-positive senescent cells delays ageing-associated disorders. *Nature*. 479, 232–236 (2011). <https://doi.org/10.1038/nature10600>.

78.

Serrano, M., Blasco, M.A.: Cancer and ageing: convergent and divergent mechanisms. *Nature Reviews Molecular Cell Biology*. 8, 715–722 (2007). <https://doi.org/10.1038/nrm2242>.

79.

Krizhanovsky, V., Yon, M., Dickins, R.A., Hearn, S., Simon, J., Miething, C., Yee, H., Zender, L., Lowe, S.W.: Senescence of Activated Stellate Cells Limits Liver Fibrosis. *Cell*. 134, 657–667 (2008). <https://doi.org/10.1016/j.cell.2008.06.049>.

80.

Xue, W., Zender, L., Miething, C., Dickins, R.A., Hernando, E., Krizhanovsky, V., Cordon-Cardo, C., Lowe, S.W.: Senescence and tumour clearance is triggered by p53 restoration in murine liver carcinomas. *Nature*. 445, 656–660 (2007). <https://doi.org/10.1038/nature05529>.

81.

Narita, M., Lowe, S.W.: Senescence comes of age. *Nature Medicine*. 11, 920–922 (2005). <https://doi.org/10.1038/nm0905-920>.

82.

Sarin, K.Y., Cheung, P., Gilson, D., Lee, E., Tennen, R.I., Wang, E., Artandi, M.K., Oro, A.E., Artandi, S.E.: Conditional telomerase induction causes proliferation of hair follicle stem cells. *Nature*. 436, 1048–1052 (2005). <https://doi.org/10.1038/nature03836>.