**Chapter 7 Replication, Maintenance, and Rearrangements of Genomic DNA**

**7.1 DNA Replication**

Annunziato, A. T. 2005. Split decision: What happens to nucleosomes during DNA replication? *J. Biol. Chem.* 280: 12065– 12068. [R]

Armanios, M. and E. H. Blackburn. 2012. The telomere syndromes. *Nature Rev. Genet.* 13: 693–704. [R]

Bell, S. P. and A. Dutta. 2002. DNA replication in eukaryotic cells. *Ann. Rev. Biochem.* 71: 333–374. [R]

Bernandes de Jesus, B. and M. A. Blasco. 2013. Telomerase at the intersection of cancer and aging. *Trends Genet.* 29: 513–520.[R]

Cozzarelli, N. R., G. J. Cost, M. Nollmann, T. Uiard and J. E. Stray. 2006. Giant proteins that move DNA: bullies of the genomic playground. *Nature Mol. Cell Biol.* 7: 580–588. [R]

Frick, D. N. and C. C. Richardson. 2001. DNA primases. *Ann. Rev. Biochem.* 70: 39–80. [R]

Ganai, R. A. and E. Johansson. 2016. DNA replication—a matter of fidelity. *Mol. Cell* 62: 745-755. [R]

Gilbert, D. M. 2004. In search of the holy replicator. *Nature Rev. Mol. Cell Biol.* 5: 1–8. [R]

Greider, C. W. and E. H. Blackburn. 1985. Identification of a specific telomere terminal transferase activity in *Tetrahymena* extracts. *Cell* 43: 405–413. [P]

Horn, S., A. Figl, P. S. Rachakonda, C. Fischer, A. Sucker, A. Gast, S. Kadel, I. Moll, E. Nagore, K. Hemminki, D. Schadendorf and R. Kumar. 2013. *TERT* promoter mutations in familial and sporadic melanoma. *Science* 339: 959-961. [P]

Huang, F. W., E. Hodis, M. J. Xu, G. V. Kryukov, L. Chin and L. A. Garraway. 2013. Highly recurrent *TERT* promoter mutations in human melanoma. *Science* 339: 957-959. [P]

Huberman, J. A. and A. D. Riggs. 1968. On the mechanism of DNA replication in mammalian chromosomes. *J. Mol. Biol.* 32: 327–341. [P]

Johnson, A. and M. O’Donnell. 2005. Cellular DNA replicases: components and dynamics at the replication fork. *Ann. Rev. Biochem.* 74: 283–315. [R]

Kornberg, A. 2000. Ten commandments: lessons from the enzymology of DNA replication. *J. Bacteriol.* 182: 3613–3618 [R]

Machida, Y. J., J. L. Hamlin and A. Dutta. 2005. Right place, right time, and only once: replication initiation in metazoans. *Cell* 123: 13–24. [R]

McCulloch, S. D. and T. A. Kunkel. 2008. The fidelity of DNA synthesis by eukaryotic replicative and translesion synthesis polymerases. *Cell Res.* 18: 148–161. [R]

Mechali, M. 2010. Eukaryotic DNA replication origins: many choices for appropriate answers. *Nature Rev. Mol. Cell Biol.* 11: 728–738. [R]

Moldovan, G.-L., B. Pfander and S. Jentsch. 2007. PCNA, the maestro of the replication fork. *Cell* 129: 665–679. [R]

Nitiss, J. L. 2009. DNA topoisomerase II and its growing repertoire of biological functions. *Nature Rev. Cancer* 9: 327–337. [R]

Pellegrini, L. and A. Costa. 2016. New insights into the mechanism of DNA duplication by the eukaryotic replisome. *Trends Biochem. Sci.* 41:859-871. [R]

Pommier, Y., Y. Sun, S. N. Huang and J. L. Nitiss. 2016. Roles of eukaryotic topoisomerases in transcription, replication and genome stability. *Nature Rev. Mol. Cell Biol.* 17: 703-721. [R]

Rivera-Mulia, J. C. and D. M. Gilbert. 2016. Replicating large genomes: divide and conquer. *Mol. Cell* 62: 756-765. [R]

Robinson, N. P. and S. D. Bell. 2005. Origins of DNA replication in the three domains of life. *FEBS J.* 272: 3757–3766. [R]

Stillman, B. 2008. DNA polymerases at the replication fork in eukaryotes. *Mol. Cell* 30: 259–260. [R]

Stinthcomb, D. T., K. Struhl and R. W. Davis. 1979. Isolation and characterization of a yeast chromosomal replicator. *Nature* 282: 39–43. [P]

**7.2 DNA Repair**

Cejka, P. DNA end resection: nucleases team up with the right partners to initiate homologous recombination. *J. Biol.   
Chem.* 290: 22931-22938. [R]

Cleaver, J. E. 1968. Defective repair replication of DNA in xeroderma pigmentosum. *Nature* 218: 652–656. [P]

David, S. S., V. L. O’Shea and S. Kundu. 2007. Base-excision repair of oxidative DNA damage. *Nature* 447: 941–950. [R]

Essen, L. O. and T. Klar. 2006. Light-driven DNA repair by photolyases. *Cell. Mol. Life Sci.* 63: 1266–1277. [R]

Fishel, R., M. K. Lescoe, M. R. S. Rao, N. G. Copeland, N. A. Jenkins, J. Garber, M. Kane and R. Kolodner. 1993. The human mutator gene homolog *MSH2* and its association with hereditary nonpolyposis colon cancer. *Cell* 75: 1027–1038. [P]

Friedberg, E. C., A. R. Lehmann and R. P. P. Fuchs. 2005. Trading places: How do DNA polymerases switch during translesion DNA synthesis? *Mol. Cell* 18: 499–505. [R]

Friedberg, E. C., G. C. Walker, W. Siede, R. D. Wood, R. A. Schultz and T. Ellenberger. 2005. *DNA Repair and Mutagenesis.* Washington, D.C.: ASM Press.

Hanawalt, P. C. and G. Spivak. 2008. Transcription- coupled DNA repair: two decades of progress and surprises. *Nature Rev. Mol. Cell Biol.* 9: 958–970. [R]

Hegde, M. L., T. K. Hazra and S. Mitra. 2008. Early steps in the DNA base excision/ single-strand interruption repair pathway in mammalian cells. *Cell Res.* 18: 27–47. [R]

Hustedt, N. and D. Durocher. 2017. The control of DNA repair by the cell cycle. *Nature Cell Biol.* 19: 1-9. [R]

Jensen, R.B., A. Carreira and S. C. Kowalczykowski. 2010. Purified human BRCA2 stimulates RAD51-mediated recombination. *Nature* 467*:* 678–683*.* [P]

Jiricny, J. 2006. The multifaceted mismatch repair system. *Nature Rev. Mol. Cell Biol.* 7: 335–346. [R]

Leach, F. S. and 34 others. 1993. Mutations of a *mutS* homolog in hereditary nonpolyposis colorectal cancer. *Cell* 75: 1215–1225. [P]

Lehmann, A. R., A. Niimi, T. Ogi, S. Brown, S. Sabbioneda, J. F. Wing, P. L. Kannouche and C. M. Green. 2007. Translesion synthesis: Y-family polymerases and the polymerase switch. *DNA Repair* 6: 891–899. [R]

Lieber, M. R. 2008. The mechanism of human nonhomologous DNA end joining. *J. Biol. Chem.* 283: 1–5. [R]

Marteijn, J. A., H. Lans, W. Vermeulen and J. H. Hoeijmakers. 2014. Understanding nucleotide excision repair and its roles in cancer and ageing. *Nature Rev. Mol. Cell Biol.* 15: 465–481. [R]

Mimitou, E. P. and L. S. Symington. 2009. Nucleases and helicases take center stage in homologous recombination. *Trends Biochem. Sci.* 34: 264–272. [R]

Pena-Diaz, J. and J. Jiricny. 2012. Mammalian mismatch repair: error-free or error-prone? *Trends Biochem. Sci.* 37: 206–214. [R]

San Filippo, J., P. Sung and H. Klein. 2008. Mechanism of eukaryotic homologous recombination. *Ann. Rev. Biochem.* 77: 9.1–9.29. [R]

Sedgwick, B., P. A. Bates, J. Paik, S. C. Jacobs and T. Lindahl. 2007. Repair of alkylated DNA: recent advances. *DNA Repair* 6: 429–442. [R]

Thorlund, T. and S. C. West. 2007. BRCA2: a universal recombinase regulator. *Oncogene* 26: 7720–7730. [R]

Yang, W. and R. Woodgate. 2007. What a difference a decade makes: insights into translesion DNA synthesis. *Proc. Natl. Acad. Sci. USA* 104: 15591–15598. [R]

**7.3 DNA Rearrangements and Gene Amplification**

Burns, K. H. 2017. Transposable elements in cancer. *Nature Rev. Cancer* 17: 415-424. [R]

Chaudhuri, J. and F. W. Alt. 2004. Class switch recombination: Interplay of transcription, DNA deamination and DNA repair. *Nature Rev. Immunol.* 4: 541–552. [R]

Di Noia, J. M. and M. S. Neuberger. 2007. Molecular mechanisms of antibody somatic hypermutation. *Ann. Rev. Biochem.* 76: 1–22. [R]

Honjo, T., H. Nagaoka, R. Shinkura and M. Muramatsu. 2005. AID to overcome the limitations of genomic information. *Nature Immunol.* 6: 655–661. [R]

Hozumi, N. and S. Tonegawa. 1976. Evidence for somatic rearrangement of immunoglobulin genes coding for variable and constant regions. *Proc. Natl. Acad. Sci. USA* 73: 3628–3632. [P]

Jung, D. and F. W. Alt. 2006. Mechanism and control of V(D)J recombination at the immunoglobulin heavy chain locus. *Ann. Rev. Immunol.* 24: 541–570. [R]

Maul, R. W. and P. J. Gearhart. 2010. AID and somatic hypermutation. *Adv. Immunol.* 105: 159–191. [R]

Schatz, D. G. and Y. Ji. 2011. Recombination centres and the orchestration of V[D]J recombination. *Nature Rev. Immunol.* 11: 251–263. [R]

Teng, G. and F. N. Papavasiliou. 2007. Immunoglobulin somatic hypermutation. *Ann. Rev. Genet.* 41: 107–120. [R]

Tower, J. 2004. Developmental gene amplification and origin regulation. *Ann. Rev. Genet.* 38: 273–304. [R]