

**PUBLICATIONS OF  
GRAHAM C. WALKER**

1. Barrio, M.C.G., Barrio, J., Walker, G.C., Novelli, A., and Leonard, N.J. 2,4,6-Trisubstituted Pyridines. Synthesis, Fluorescence, and Scintillator Properties, J. Amer. Chem. Soc. 95:4891-4895 (1973).
2. Arter, D.B., Walker, G.C., Uhlenbeck, O.C., and Schmidt, P.G. PMR of the Self-Complementary Oligoribonucleotide CpCpGpG, Biochem. Biophys. Commun. 61:1089-1094 (1974).
3. Walker, G.C., Leonard, N.J., Armstrong, D.J., Murai, N., and Skoog, F. The Mode of Incorporation of 6-Benzylaminopurine into Tobacco Callus Ribonucleic Acid, Plant Physiol., 54:737-743 (1974).
4. Schmitz, R.Y., Skoog, F., Vincze, A., Walker, G.C., Kirkegaard, L.H. and Leonard, N.J. Comparison of the Cytokinin Activities of the Base, Ribonucleoside, and 5'- and Cyclic-3', 5' Monophosphate Ribonucleotides of N(6)-Isopentenyl-, N(6)-Benzyl-, or 8-Bromoadenine. Phytochemistry, 14:1479-1484 (1975).
5. Walker, G.C. and Uhlenbeck, O.C. Stepwise Enzymatic Oligoribonucleotide Synthesis Including Modified Nucleotides, Biochemistry, 14:817-824 (1975).
6. Walker, G.C., Uhlenbeck, O.C., Bedows, E. and Gumport, R.I. T4-Induced RNA Ligase Joins Single-Stranded Oligoribonucleotides Proc. Natl. Acad. Sci., USA, 72:122-126 (1975).
7. Walker, G.C. Plasmid (pKM101)-Mediated Enhancement of Repair and Mutagenesis: Dependence on Chromosomal Genes in *Escherichia coli* K-12, Molec. Gen. Genet. 152:93-103 (1977).
8. Lackey, D., Walker, G.C., Keng, T. and Linn, S. Characterization of an Endonuclease Associated with the Drug Resistance Plasmid, pKM101. J. Bacteriol. 131:583-588 (1977).
9. Walker, G.C. Keynote Address. Gulf Coast Molecular Biology Conference. Plasmid-Mediated Enhancement of Mutagenesis. Texas J. Science, Special Publication 3:3-26 (1977).
10. Walker, G.C. Isolation and Characterization of Mutants of the Plasmid pKM101 Deficient in their Ability to Enhance Mutagenesis and Repair. J. Bacteriol. 133:1203-1211 (1978).
11. Walker, G.C. Inducible Reactivation and Mutagenesis of UV-Irradiated Bacteriophage P22 in *Salmonella typhimurium* LT2 Containing the Plasmid pKM101. J. Bacteriol. 135:415-421 (1978).
12. Walker, G.C. Lack of Effect on Recombination of Mutagenesis-Enhancing Plasmids in *Escherichia coli* K-12 and *Salmonella typhimurium* LT2. J. Gen. Microbiol. 108:321-323 (1978).

13. Walker, G.C. Mutagenesis-and Repair-Enhancing Activities Associated with the Plasmid pKM101. *Cold Spring Harbor Symp. Quant. Bio.*, 43:893-896 (1979).
14. Fujii, T., Walker, G.C., Leonard, N.J., Delong, D.C., and Gerzon, K. 3-Substituted Adenines. *In vitro* Enzyme Inhibition and Antiviral Activity. *J. Med. Chem.* 22:125-129 (1979).
15. Kronish, J.W. and Walker, G.C. The Effects of the Ultraviolet Protecting Plasmids pKM101 and R205 on DNA Polymerase I Activity in *Escherichia coli* K-12. *Mutat. Res.* 60:135-142 (1979).
16. Walker, G.C. Theory and Design of Short-term Bacterial Tests for Mutagenesis. In "Assessing Chemical Mutagens: The Risk to Humans, "First Banbury Report", V.K. McElheny and S. Abrahamson (Eds.), pp. 63-80. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y. (1979).
17. Walker, G.C. and Dobson, P.P. Mutagenesis and Repair Deficiencies of *Escherichia coli umuC* Mutants are Suppressed by the Plasmid pKM101. *Molec. Gen. Genet.*, 172:17-24 (1979).
18. Dobson, P.P. and Walker, G.C. Plasmid (pKM101)-Mediated Weigle Reactivation in *Escherichia coli* and *Salmonella typhimurium* LT2: Genetic Dependence, Kinetics of Induction, and Effect of Chloramphenicol. *Mutation Research*, 71: 25-41 (1980).
19. Kenyon, C.J. and Walker, G.C. DNA-Damaging Agents Stimulate Gene Expression at Specific Loci in *Escherichia coli*. *Proc. Natl. Acad. Sci., USA*, 77: 2819-2823 (1980).
20. Shanabruch, W.G. and Walker, G.C. Localization of the pKM101 Gene(s) Involved in *recA<sup>+</sup>lexA<sup>+</sup>*-Dependent Mutagenesis. *Molec. Gen. Genet.*, 179:289-297 (1980).
21. Kenyon, C.J. and Walker, G.C. Expression of the *Escherichia coli uvrA* Gene is Inducible. *Nature*, 289:808-810 (1981).
22. Langer, P.J. and Walker, G.C. Restriction Endonuclease Cleavage Map of pKM101: Relationship to Parent Plasmid R46. *Molec. Gen. Genet.*, 182:268-272 (1981).
23. Langer, P.J., Shanabruch, W.G., and Walker, G.C. Functional Organization of the Plasmid pKM101. *J. Bacteriol.*, 145:1310-1316 (1981).
24. Shanabruch, W.G., Behlau, I., and Walker, G.C. Spontaneous Mutators of *Salmonella typhimurium* LT2 Generated by Insertion of Transposable Elements. *J. Bacteriol.*, 147:827-835 (1981).
25. Bagg, A., Kenyon, C.J. and Walker, G. C. Inducibility of a Gene Product Required for UV and Chemical Mutagenesis in *Escherichia coli*. *Proc. Natl. Acad. Sci. USA*, 78: 5449-5753 (1981).
26. Walker, G.C., Kenyon, C.J. Bagg, A., Langer, P.J., and Shanabruch, W.G. Mutagenesis and Cellular Responses to DNA Damage. *J. Nat. Cancer Instit. Monograph*, 257-267 (1982).

27. Walker, G.C., Kenyon, C.J., Bagg, A., Elledge, S.J., Perry, K.L. and Shanabruch, W.G. Regulation and Function of *Escherichia coli* Genes Induced by DNA Damage. In "Molecular and Cellular Mechanisms of Mutagenesis", Eds. J.F. Lemontt and W.M. Generoso, pp. 43-63, Plenum Press, New York (1982).
28. Walker, G.C., Elledge, S.J., Perry, K.L., Bagg, A., and Kenyon, C.J. Regulation and Function of Cellular Gene Products Involved in UV and Chemical Mutagenesis in *E. coli*. In "Induced Mutagenesis: Molecular Mechanisms and Their Implications for Environmental Protection" Eds. C.W. Lawrence, pp 181-198, Plenum Press, New York, 1982.
29. Kenyon, C.J., Brent, R., Ptashne, M. and Walker, G.C. The Regulation of Damage-inducible Genes in *Escherichia coli*, *J. Mol. Biol.*, 160:445-457 (1982).
30. Mulligan, J.T., Margolin, W., Krueger, J.H., and Walker, G.C. Mutations Affecting the Regulation of Methionine Biosynthetic Genes Isolated By the Use of *met-lac* Fusions. *J. Bacteriol.*, 151: 609-619 (1982).
31. Perry, K.L., Elledge, S.J., Lichtman, M.R., and Walker, G.C. Plasmid-Mediated Enhancement of Mutagenesis. In "Environmental Mutagens and Carcinogens (Proceedings of the 3rd International Conference on Environmental Mutagens). Eds. T. Sugimura, S. Kondo, and H. Takebe, pp. 113-120. University of Tokyo Press, Tokyo, and Alan R. Liss, Inc., New York, 1982.
32. Walker, G.C. Molecular Principles Underlying the Ames *Salmonella*/Microsome Test: Elements and Design of Short Term Mutagenesis Test. In: *In vitro Toxicity Testing of Environmental Agents: Current and Future Possibilities, Part A.*, Eds. A.R. Kolber and T.K. Wong, L.D. Grant, R.S. DeWoskin and T.J. Huges. pp. 15-40, Plenum Press, New York, 1982.
33. Walker, G.C., Elledge, S.J., Kenyon, C.J., Krueger, J.H., and Perry, K.L. Mutagenesis and Other Responses Induced by DNA Damage in *Escherichia coli*. *Biochimie*, 64:607-610 (1982).
34. Perry, K.L. and Walker, G.C. Identification of Plasmid (pKM101)-coded Proteins Involved in Mutagenesis and UV-resistance, *Nature*, 300:278-281 (1982).
35. Shanabruch, W.G., Rein, R.P., Behlau, I., and Walker, G.C. Mutagenesis by Methylating and Ethylating agents in *mutH*, *L*, *S* and *uvrD* Mutants of *Salmonella typhimurium* LT2. *J. Bacteriol.* 153:33-44 (1983).
36. Krueger, J. and Walker, G.C. Mud(Ap, *lac*)-Generated Fusions in Studies of Gene Expression. *Methods in Enzymology* 100(PartB):501-509 (1983).
37. Elledge, S.H. and Walker, G.C. Proteins Required for UV and Chemical Mutagenesis: Identification of the Products of the *umuC* Locus of *Escherichia coli* *J. Mol. Biol.*, 164: 175-192 (1983).
38. Walker, G.C. Genetic Strategies in Strain Design for Fermentations. In "The Biological Basis of New Developments in Biotechnology" Eds. A. Hollaender, A.I. Laskin, and P. Rogers, pp349-376, Plenum Press, New York 1983.

39. Pang, P.P. and Walker, G.C. Identification of the *uvrD* Product of *Salmonella typhimurium* LT2. J. Bacteriol. 153:1172-1125 (1983).
40. Krueger, J.H., Elledge, S.J. and Walker, G.C. Isolation and Characterization of Tn5 Insertion Mutations in the *lexA* Gene of *Escherichia coli* J. Bacteriol., 153:1368-1378 (1983).
41. Winans, S.C. and Walker, G.C. Genetic Localization and Characterization of a pKM101-encoded Endonuclease, J. Bacteriol., 154:1117-1125 (1983).
42. Pang, P.P. and Walker, G.C. The *Salmonella typhimurium* LT2 *uvrD* Gene is Regulated by the *lexA* Gene Product, J. Bacteriol. Walker, G.C. 154:1502-1504 (1983).
43. Elledge, S.J. and Walker, G.C. The *muc* Genes of pKM101 are Induced by DNA Damage, J. Bacteriol. 155:1306-1315 (1983).
44. Elledge, S.J., Perry, K.L., Krueger, J.H., Mitchell, B.B., and Walker, G.C. Cellular Components Required for Mutagenesis. In "Cellular Responses to DNA Damage" (Eds.) E.C. Friedberg and B.A. Bridges, p. 353-359, Alan R. Liss, New York, 1983.
45. Markham, B.E., Harper, J.E., Mount, D.W., Sancar, G.B., Rupp, W.D., Kenyon, C.J., and Walker, G.C. Analysis of mRNA Synthesis Following Induction of the *E. coli* SOS System. J. Mol. Biol. 177:237-248 (1984).
46. Leigh, J.A., Finan, T.M., Johansen, E., Walker, G.C., Signer, E.R., Hirsch, A.M., Kuldau, G.A. and Deegan, S. Exopolysaccharide-Deficient Mutants of *Rhizobium meliloti* which Form Ineffective Nodules - A New Symbiotic Mutant Phenotype. 2nd International Symposium on Molecular Genetics of Bacterial Plant interaction (1984).
47. Walker, G.C. The SOS and Adaptive Responses to DNA Damage. In "Molecular and Cellular Approaches to Understanding Mechanisms of Toxicity", (Ed.) A. Tashjian, p. 28-37, Harvard University, Boston, (1984).
48. Walker, G.C. Mutagenesis and Inducible Responses to DNA Damage in *Escherichia coli*. Microbiol. Rev. 48:60-93 (1984).
49. Krueger, J.H. and Walker, G.C. *groEL* and *dnaK* Genes of *Escherichia coli* are Induced by UV and Nalidixic Acid in an *htpR*<sup>+</sup>-Dependent Fashion. Proc. Natl. Acad. Sci. USA, 81:1499-1503 (1984).
50. Yerkes, J.H., Casson, L.P., Honkanen, A.T., and Walker, G.C. Anaerobiosis Induces the Expression of *ant*, a New Locus of *Escherichia coli* with a Role in Anaerobic Electron Transport. J. Bacteriol. 158:180-186 (1984).
51. DeVos, G., Finan, T.M., Signer, E.R., and Walker, G.C. Host-dependent Tn5-mediated streptomycin resistance, J. Bacteriol., 159:395-399 (1984).
52. Finan, T.M., Hartweig, E., LeMieI, K., Bergman, K., Walker, G.C., and Signer, E.R. Generalized Transduction in *Rhizobium meliloti*, J. Bacteriol. 159: 120-124 (1984).

53. Walker, G.C. Mutagenesis Enhancement by Plasmids in Mutagenesis Tester Strains. In "Basic and Applied Mutagenesis." Basic Life Sciences, Vol. 34, Eds. A. Muhammed, R.C. von Borstel, A. Hollaender, pp 111-120, Plenum Press, New York, 1985.
54. Winans, S.C. and Walker, G.C. The Conjugal Transfer System of the N Incompatibility Group Plasmid pKM101. J. Bacteriol. 161:402-410 (1985).
55. Winans, S.C. and Walker, G.C. The Entry-Exclusion Determinant(s) of the IncN Plasmid pKM101. J. Bacteriol. 161:411-416 (1985).
56. Winans, S.C. and Walker, G.C. Fertility Inhibition of RP1 by the IncN Plasmid pKM101. J. Bacteriol. 161:425-427 (1985).
57. Winans, S.C. and Walker, G.C. Identification of pKM101-Coded Loci Specifying Potentially Lethal Gene Products. J. Bacteriol. 161:417-424 (1985).
58. LeMotte, P.K. and Walker, G.C. Induction and Autoregulation of *ada*, a Positively Acting Element Controlling the Response of *Escherichia coli* to Methylating Agents, J. Bacteriol. 161: 888-895 (1985).
59. Winans, S.C., Elledge, S.J., Krueger, J.H. and Walker, G.C. Site-Directed Insertion and Deletion Mutagenesis with Cloned Fragments in *Escherichia coli*. J. Bacteriol. 161:1219-1221 (1985).
60. Pang, P.P., Tsen, S. Lundberg, A.S., and Walker, G.C. The *mutH*, *L*, *S*, and *uvrD* genes of *Salmonella typhimurium* LT2. Cold Spring Harbor Symp. Quantit. Biol., 49:597-602 (1985).
61. Marsh, L. and Walker, G.C. Cold Sensitivity Induced by Overproduction of UmuDC in *Escherichia coli*. J. Bacteriol. 162:155-161 (1985).
62. Yoshihama, M., Higashio, K., Rao, K. Akedo, M., Shanabruch, W., Follettie, M., Walker, G. and Sinskey, A. A Cloning Vector System for *Corynebacterium glutamicum*. J. Bacteriol. 162: 591-597 (1985).
63. Perry, K.L., Elledge, S.J., Mitchell, B.B., Marsh, L. and Walker, G.C. *umuDC* and *mucAB* Operons Whose Products are Required for UV Light- and Chemical-Induced Mutagenesis: UmuD, MucA, and LexA Proteins Share Homology. Proc. Natl. Acad. Sci. USA 82:4331-4335 (1985).
64. Elledge, S.J. and Walker, G.C. Phasmid Vectors for Identification of Genes by Complementation *Escherichia coli* Mutants. J. Bacteriol. 162: 777-783 (1985).
65. Walker, G.C., Marsh, L., and Dodson. Cellular Responses to DNA damage. Environmental Health Perspective. 62:115-117 (1985).
66. Finan, T.M., Hirsch, A.M., Leigh, J.A., Johnsen, E. Kuldau, G.A., Deegan, S., Walker, G.C. and Signer, E.R. Symbiotic Mutants of *Rhizobium meliloti* that Uncouple Plant from Bacterial Differentiation. Cell 40:869-877 (1985).
67. Langer, P.J., Perry, K.L., Walker, G.C. Complementation of a pKM101 Derivative that Decreases Resistance to UV-Killing but Increases Susceptibility to Mutagenesis. Mutat. Res., 150:147-158 (1985).

68. Pang, P.P., Lundberg, A.S., and Walker, G.C. Identification and Characterization of the *mutL* and *mutS* Gene Products of *Salmonella typhimurium* LT2. *J. Bacteriol.* 163:1007-1015 (1985).
69. Leigh, J.A., Signer, E.R., and Walker, G.C. Exopolysaccharide-Deficient Mutants of *Rhizobium meliloti* that Form Ineffective Nodules. *Proc. Natl. Acad. Sci. USA* 82:6231-6235 (1985).
70. Walker, G.C. Inducible DNA Repair Systems. *Ann. Rev. Biochem.* 54:425-457 (1985).
71. Walker, G.C., Marsh, L. and Dodson, L.A. Genetic Analyses of DNA Repair: Inference and Extrapolation, *Ann. Rev. Genet.* 19:103-26 (1985).
72. Paek, K.-H, Walker, G.C. Defect in Expression of Heat-Shock Proteins at High Temperature in *xthA* Mutants. *J. Bacteriol.* 165:763-770 (1986).
73. Walker, G.C. Genetic and Recombinant DNA Strategies Based on the Use of Transposable Elements. *In "La Ingeniería Genética y Sus Aplicaciones"* (Ed.) Jose R. Pellon, pp51-61, Editorial Acribia, Zaragoza, Spain (1986).
74. Marsh, L. and Walker, G.C. Mutagenic DNA Repair in Bacteria: The Role of UmuDC and MucAB. *In Mechanisms of DNA Damage and Repair*, (Eds.) M.G. Simic, L. Grossman and A.C. Upton, Plenum Press, New York, pp. 273-280 (1986).
75. Marsh, L., Dodson, L.A., Dykstra, C., Sobell, D., and Walker, G.C. Genetic Analyses of the Roles of UmuDC and MucAB in Mutagenesis. Antimutagenesis and Anticarcinogenesis: Mechanisms. (Eds.) D.M. Shankel, P. Hartman, T. Kada, A. Hollaender, Plenum Press, New York, pp. 251-257 (1986).
76. DeVos, G.F., Walker, G.C., and Signer, E.R. Genetic Manipulations in *Rhizobium meliloti* Utilizing Two New Transposon Tn5 Derivatives. *Molec. Gen. Genet.* 204:485-491 (1986).
77. Walker, G.C. Plasmid Biology of pKM101: Role of the *mucAB* Genes. *In: Antibiotic Resistance Genes: Ecology, Transfer, and Expression*, (Eds.) S.B. Levy, R.P. Novick, pp 313-321, Cold Spring Harbor Laboratory, 1986.
78. Paek, K.-H. and Walker, G.C. *E. coli dnaK* Null Mutants are Inviably at High Temperature. *J. Bacteriol.* 169:283-290 (1987).
79. Paek, K.-H, Dykstra, C.C., Shevell, D.E., Battista, J.R., Marsh, L. and Walker, G.C. Global Responses of *Escherichia coli* to DNA Damage and Stress. *In: Phosphate Metabolism and Cellular Regulation in Microorganisms*, (Eds.) A. Torriani-Gorini, F.G. Rothman, S. Silver, A. Wright, E. Yagel. pp. 295-299. American Society of Microbiology, Washington, D.C. (1987).
80. Marsh, L. and Walker, G.C. New Phenotypes Associated with *mucAB*: Alteration of MucA Sequence Homologous to LexA Cleavage Site. *J. Bacteriol.* 169:1818-1823 (1987).

81. Walker, G.C., Shevell, D.E. and Battista, J.R. Mutagenesis and Cellular Responses to DNA Damage. *In: Genetics of Industrial Microorganisms*, (Eds.) M. Alacevic, D. Hranueli, Z. Toman, pp. 65-71, Pliva Press, Split, Yugoslavia, (1987).
82. Walker, G.C. The SOS Response of *Escherichia coli*. *In: Escherichia coli and Salmonella typhimurium: Cellular and Molecular Biology, Part IV*: (Eds.) F.C. Neidhardt, J.L. Ingraham, K.B. Low, B. Magasanik, M. Schaechter, and H.E. Umbarger, pp. 1346-1357 (1987).
83. Leigh, J.A. and Reed, J. Symbiotic Mutants of *Rhizobium meliloti* Which Produce Non-Succinylated Exopolysaccharide. *In: "Molecular Genetics of Plant Microbe Interactions"*, pp. 165-168, (Eds.) D.P. Verma and N. Brisson, Martinus Nijhoff Publishers, (1987).
84. Battista, J.R., Nohmi, T. Donnelly, C.E. and Walker, G.C. Cellular Functions Required for UV and Chemical Mutagenesis in *Escherichia coli*. *In: "Radiation Research, Proceedings of the 8th International Congress of Radiation Research, Edinburgh, July 1987"*, pp. 388-393, (Eds.) E.M. Fielden, J.F. Fowler, J.H. Hendry and D. Scott, Taylor & Francis Ltd., London (1987).
85. Leigh, J.A., Reed, J.W., Hanks, J.F., Hirsch, A., and Walker, G.C. *Rhizobium meliloti* Mutants That Fail to Succinylate Their Calcofluor-Binding Exopolysaccharide are Defective in Nodule Invasion. *Cell* 51:579-587 (1987).
86. Haber, L.T., Pang, P.P., Sobell, D.I., Mankovich, J.A. and Walker, G.C. Nucleotide Sequence of the *Salmonella typhimurium mutS* Gene Required for Mismatch Repair: Homology of MutS and HexA of *Streptococcus pneumoniae*. *J. Bacteriol.* 170:197-202 (1988).
87. Nohmi, T., Battista, J.R., Dodson, L.A. and Walker, G.C. RecA-mediated Cleavage Activates UmuD for Mutagenesis: Mechanistic Relationship Between Transcriptional Derepression and Posttranslational Activation. *Proc. Natl. Acad. Sci. USA* 85:1816-1820 (1988).
88. Shevell, D.E., Abou-Zamzam, A.M., Demple, B. and Walker, G.C. Construction of an *Escherichia coli* K-12 *ada* Deletion by Gene Replacement in a *recD* Strain Reveals a Second Methyltransferase That Repairs Alkylated DNA. *J. Bacteriol.* 170:3294-3296 (1988).
89. Klein, S. Walker, G.C. and Signer, E.R. All *nod* Genes of *Rhizobium meliloti* Are Involved in Alfalfa Nodulation by *exo* Mutants. *J. Bacteriol.* 170:1003-1006 (1988).
90. Nohmi, T., Battista, J.R. and Walker, G.C. RecA-Mediated Cleavage Activates UmuD for UV and Chemical Mutagenesis: *In: DNA Replication and Mutagenesis*, (Eds.) R.E. Moses, W.C. Summers, pp 249-354. American Society for Microbiology, Washington, D.C., (1988).
91. Battista, J.R., Nohmi, T., Donnelly, C.E. and Walker, G.C. Role of UmuD and UmuC in UV and Chemical Mutagenesis. *In: "Mechanisms and Consequences of DNA Damage Processing"*, (Eds.) E.C. Friedberg, P.C. Hanawalt, pp 455-459, Alan R. Liss, Inc., New York, (1988).

92. Battista, J.R., Nohmi, T., Donnelly, C.E. and Walker, G.C. A New Dimension to SOS Regulation. *In: "Gene Expression and Regulation: The Legacy of Luigi Gorini,"* (Eds.) M. Bissell, G. Deho, G. Sironi, A. Torriani, pp 41-48 Excerpta Medica, (1988).
93. Reed, J.W., Glazebrook, J., Long, S., Reuber, T.L., and Walker, G.C. Analyses of the Role of Exopolysaccharides in *Rhizobium* Symbiosis. *In: "Physiology and Biochemistry of Plant-Microbial Interactions"* (Eds.) N.T. Keen, T. Kosuge, L. Walling, pp. 60-66 American Society of Plant Physiologists, (1988).
94. Long, S. Reed, J.W., Himawan, J. and Walker, G.C. Genetic Analysis of a Cluster of Genes Required for the Synthesis of the Calcofluor-binding Exopolysaccharide of *Rhizobium meliloti*. *J. Bacteriol.* 170:4239-4248 (1988).
95. Doherty, D., Leigh, J.A., Glazebrook, J. and Walker, G.C. Mutants of *Rhizobium meliloti* That Overproduce Its Acidic Calcofluor-binding Exopolysaccharide. *J. Bacteriol.* 170:4249-4256 (1988).
96. Long, S., McCune, S., and Walker, G.C. Symbiotic Loci of *Rhizobium meliloti* Identified by Random *TnphoA* Mutagenesis. *J. Bacteriol.* 170:4257-4265 (1988).
97. Shevell, D.E., LeMotte, P.K., and Walker, G.C. Alteration of the Carboxyl-Terminal Domain of the Ada Protein Influences its Inducibility, Specificity and Strength as a Transcriptional Activator. *J. Bacteriol.* 170:5263-5271 (1988).
98. Reed, J.W., Glazebrook, J., Long, S., Reuber, T.L. and Walker, G.C. Genetic Analyses of the Role of Exopolysaccharides in *Rhizobium* Symbiosis. *In: "Molecular Genetics of Plant-Microbe Interactions 1988,"* (Eds.) R. Palacios and D.P.S. Verma, pp 41-46, APS Press, St. Paul, Minnesota, (1988).
99. Glazebrook, J. and Walker, G.C. A Novel Exopolysaccharide Can Function in Place of the Calcofluor-Binding Exopolysaccharide in Nodulation of Alfalfa by *Rhizobium meliloti*. *Cell* 56:661-672 (1989).
100. Walker, G.C. General Principles of DNA Repair in Microorganisms and Implications for Future Research. *In: "Genetic Susceptibility to Environmental Mutagens and Carcinogens, Monograph No. 2,"* (Ed.) Arthur D. Bloom, Lawrence Saptz, and Natalie W. Paul, pp 45-59, March of Dimes Defect Foundation, (1989).
101. Bukau, B., Donnelly, C.E. and Walker, G.C. DnaK and GroE Proteins Play Roles in *E. coli* Metabolism at Low and Intermediate Temperatures as well as at High Temperatures. *In: "Stress Induced Proteins,"* pp. 27-36, Alan R. Liss, Inc. (1989).
102. Bukau, B. and Walker, G.C. Cellular Defects Caused by Deletion of the *Escherichia coli dnaK* Gene Indicate Roles for Heat Shock Protein in Normal Metabolism. *J. Bacteriol.* 171:2337-2346 (1989).
103. Dutreix, M., Moreau, P.L., Bailone, A., Galibert, F., Battista, J.R., Walker, G.C. and Devoret, R. New *recA* Mutations That Dissociate the Various RecA Protein Activities in *Escherichia coli*: Evidence for an Additional Role for RecA Protein in UV Mutagenesis. *J. Bacteriol.* 171:2415-2423 (1989).

104. Battista, J.R., Nohmi, T., Donnelly, C.E., and Walker, G.C. Genetic Analyses of Cellular Functions Required for UV Mutagenesis in *Escherichia coli*. In: "Antimutagenesis and Anticarcinogenesis Mechanisms II," (Eds.) Yukiaki Kuroda, Delbert M. Shankel, and Michael D. Waters, Plenum Press, New York, New York (1989).
105. Walker, G.C., Glazebrook, J., Reed, J.W., and Reuber, T.L. Exopolysaccharides in *Rhizobium Nodulation*. In: AgBiotech 89, pp. 235-245, Conference Management Corporation, Norwalk (1989).
106. Donnelly, C.E. and Walker, G.C. *groE* Mutants of *Escherichia coli* are Defective in *umuDC*-Dependent UV Mutagenesis. *J. Bacteriol.* 171:6117-6125 (1989).
107. Mankovich, J.A., McIntyre, C.A. and Walker, G.C. Nucleotide Sequence of the *Salmonella typhimurium mutL* Gene Required for Mismatch Repair: Homology of MutL to HexB of *Streptococcus pneumoniae* and to PMS1 of the Yeast *Saccharomyces cerevisiae*. *J. Bacteriol.* 171:5325-5331(1989).
108. Battista, J.R., Nohmi, T., Donnelly, C.E. and Walker, G.C. Amino Acid Similarities to Other Proteins Offer Insights Into Roles of UmuD and UmuC In Mutagenesis. *Genome* 31:594-596 (1989).
109. Bukau, B. and Walker, G.C.  $\Delta$ *dnaK52* Mutants of *Escherichia coli* Have Defects in Chromosome Segregation and Plasmid Maintenance at Lower Temperatures. *J. Bacteriol.* 171:6030-6038 (1989).
110. Nohmi, T., Battista, J.R., Igras, V., Sun, W. and Walker, G.C. Antimutagenesis Effect of *umuD* Mutant Plasmids: Isolation and Characterization of *umuD* Mutants Reducing their Ability to Promote UV Mutagenesis in *Escherichia coli*. In: "Antimutagenesis and Anticarcinogenesis Mechanisms II, " (Eds.) Yukiaki Kuroda, Delbert M. Shankel, and Michael D. Waters, p. 417-421, Plenum Press, New York (1990).
111. Her, G.R., Glazebrook, J., Reinhold, V.N., and Walker, G.C. Structural Studies of a Novel Exopolysaccharide Produced by a Mutant of *Rhizobium meliloti* Strain Rm1021. *Carbohydr. Res.*, 198:305-312 (1990).
112. Glazebrook, J., Reuber, T.L., and Walker, G.C. Genetic Analyses Suggesting Bacterial-Plant Signaling During Nodulation. In: *Molecular Signals in Microbe-Plant Symbiotic and Pathogenic Systems*, (Ed.) B.J.J. Lugtenberg, NATO ASI Series H: Cell Biology, Vol. 36. pp. 329-336.
113. Kaufman, A. and Walker, G.C. A Constitutive O<sup>6</sup>-methylguanine-DNA Methyltransferase of *Rhizobium meliloti*. *Mutat. Res.* 235:165-169 (1990).
114. Battista, J.R., Donnelly, C.E., Ohta, T. and Walker, G.C. The SOS Response and Induced Mutagenesis. In: *Mutation and the Environment. Part A: Basic Mechanisms*. M.L. Mendelsohn and R.J. Albertini (Eds.), pp. 169-178. Wiley-Liss, New York, N.Y., (1990).
115. Glazebrook, J., Reed, J.W., Reuber, T.L. and Walker, G.C. Genetic Analyses of *Rhizobium meliloti* Exopolysaccharides. *Int. J. Biol. Macromolec.*, 12:67-70 (1990).

116. Battista, J., Ohta, T., Nohmi, T., Sun, W. and Walker, G.C. Dominant Negative *umuD* Mutations Decreasing RecA-mediated Cleavage Suggest Roles for Intact UmuD in Modulation of SOS Mutagenesis. *Proc. Natl. Acad. Sci. USA.*, 87:7190-7194 (1990).
117. McNally, K.P., Freitag, N. and Walker, G.C. LexA-independent Expression of a Mutant *mucAB* Operon. *J. Bacteriol.* 172:6223-6231 (1990).
118. Iwasaki, H., Nakata, A., Walker, G.C. and Shinagawa, H. The *Escherichia coli polB* Gene that Encodes DNA Polymerase II is Regulated by SOS System. *J. Bacteriol.* 172:6268-6273 (1990).
119. Reuber, T.L., Urzainqui, A., Glazebrook, J., Reed, J.W. and Walker, G.C. Genetic Analyses and Manipulation of *Rhizobium meliloti* Exopolysaccharides. *In: NATO ASI Series E: Applied Sciences - Volume 186: "Novel Biodegradable Microbial Polymers,"* (Ed.) E.A. Dawes, pp. 284-294, Kluwer Academic Publishers, Dordrecht, (1990).
120. Shevell, D.E., Friedman, B.M., and Walker, G.C. Resistance to Alkylation Damage in *Escherichia coli*: Role of the Ada Protein in Induction of the Adaptive Response. *Mutat. Res.* 233:53-72 (1990).
121. Bukau, B. and Walker, G.C. Mutations Altering Heat Shock Specific Subunit of RNA Polymerase Suppress Major Cellular Defects of *E. coli* Mutants Lacking the *DnaK* Chaperone. *EMBO J.*, 9:4027-4036 (1990).
122. Reuber, T.L., Long, S. and Walker, G.C. Regulation of *R. meliloti* *exo* Genes in Free-living Cells and *in planta* Examined Using *TnphoA* Fusions. *J. Bacteriol.* 173:426-434 (1991).
123. Reed, J.W. and Walker, G.C. The *exoD* Gene of *Rhizobium meliloti* Encodes a Novel Function Needed for Alfalfa Nodule Invasion. *J. Bacteriol.*, 173:664-677 (1991).
124. Reuber, T.L., Reed, J.W., Glazebrook, J., Urzainqui, A. and Walker, G.C. Analyses of the Role of *R. meliloti* Exopolysaccharides in Nodulation. *In: Advances in Molecular Genetics of Plant-Microbe Interactions* (Eds. H. Hennecke and D. Verma), Kluwer Academic Publishers, pp. 182-188 (1991).
125. Reed, J.W., Capage, M. and Walker, G.C. *Rhizobium meliloti* *exoG* and *exoJ* Mutations Affect the ExoX/ExoY System for Modulation of Exopolysaccharide Production. *J. Bacteriol.* 173:3776-3788 (1991).
126. Reed, J.W., Glazebrook, J. and Walker, G.C. The *exoR* Gene of *Rhizobium meliloti* Affects RNA Levels of Other *exo* Genes, but Lacks Homology to Known Transcriptional Regulators. *J. Bacteriol.* 173:3789-3794 (1991).
127. Bukau, B. and Walker, G.C. *E. coli* Mutants Lacking the *dnaK* Heat-shock Gene: Identification of Cellular Defects and Analysis of Suppressor Mutations. *In: "Heat Shock"* (B. Maresca and S. Lindquist, eds.), Springer Verlag, Berlin, Heidelberg, New York, pp. 55-66. (1992).

128. Haber, L.T., and Walker, G.C. Altering the Conserved Nucleotide Binding Motif in the *Salmonella typhimurium* MutS Mismatch Repair Protein Affects Both its ATPase and Mismatch Binding Activities. *EMBO J.* 10:2707-2717 (1991).
129. Reuber, T.L., Reed, J.W., Glazebrook, J., Glucksmann, M.A., Ahmann, D., Marra, A. and Walker, G.C. Genetic Analyses of *Rhizobium meliloti* Exopolysaccharides. *Biochem. Soc. Transactions* 19:636-641 (1991).
130. Glazebrook, J. and Walker, G.C. Genetic Techniques in *Rhizobium meliloti*. *Methods in Enzymol.* "Bacterial Genetic Systems," (Ed.) Jeffrey H. Miller Volume 204:398-418 (1991). Academic Press.
131. Battista, J.R., T. Nohmi, C.E. Donnelly, and G.C. Walker. What is the Molecular Mechanism of UV Mutagenesis in *Escherichia coli*? *In: "Photobiology: The Science and its Applications"* [Ed: E. Kiklis], pp. 177-182, Plenum Press, New York, N.Y. (1991).
132. Marsh, L., T. Nohmi, S. Hinton and G.C. Walker. New Mutations in Cloned *Escherichia coli umuDC* Genes: Novel Phenotypes of Strains Carrying a *umuC125* Plasmid. *Mutat. Res.* 250:183-197 (1991).
133. Shevell, D.E., and G.C. Walker. A Region of the Ada DNA Repair Protein Required for Activation of *ada* Transcription is Not Necessary for *alkA* Transcription. *Proc. Natl. Acad. Sci. USA*, 88:9001-9005 (1991).
134. McCarty, J.S., and G.C. Walker. DnaK as a Thermometer: Threonine-199 is Site of Autophosphorylation and is Critical for ATPase Activity. *Proc Natl. Acad. Sci. USA* 88:9513-9517 (1991).
135. Reed, J.W. and G.C. Walker. Acidic Conditions Permit Effective Nodulation of Alfalfa by Invasion-deficient *Rhizobium meliloti* Mutants. *Genes & Development* 5:2274-2287 (1991).
136. Klein, S., K. Lohman, R. Clover, G.C. Walker, and E.R. Signer. A Directional, High Frequency Chromosomal Mobilization System for Genetic Mapping in *Rhizobium meliloti*. *J. Bacteriol.* 174:324-326 (1992).
137. Reuber, T. L., A. Urzainqui, J. Glazebrook, J. W. Reed and G.C. Walker *Rhizobium meliloti* Exopolysaccharides, Structures, Genetic Analyses and Symbiotic Roles., *Ann. of the New York Academy of Sciences*, Volume 646, pp. 61-68 (1991).
138. Donnelly, C.E. and G.C. Walker. Coexpression of UmuD' with UmuC Suppress the Deficiency of *groE* Mutants in UV Mutagenesis. *J. Bacteriol.* 174:3133-3139 (1992)
139. Urzainqui, A., and G.C. Walker. Exogenous Suppression of the Symbiotic Deficiencies of *Rhizobium meliloti exo* Mutants. *J. Bacteriol.* 174:3403-3406 (1992).
140. Glazebrook, J., G. Meiri, and G.C. Walker. Genetic Mapping of Symbiotic Loci on the *Rhizobium meliloti* Chromosome. *Molec. Plant-Microbe Interact.*, 5:223-227 (1992)

141. Palleros, D.R., K.L. Reid, J.S. McCarty, G.C. Walker, and A.L. Fink. DnaK, hsp73 and Their Molten Globules: Two Different Ways Heat Shock Proteins Cope With Heat. *J. Biol. Chem.* 267:5279-5285 (1992).
142. Barsomian, G.D., A. Urzainqui, K. Lohman, and G.C. Walker. *Rhizobium meliloti* Mutants Unable to Synthesize Anthranilate Display a Novel Symbiotic Phenotype. *J. Bacteriol.* 174:4416-4426 (1992).
143. Walker, G.C. Role of Exopolysaccharides in Nodulation. *In: Nodulation and Nitrogen Fixation in Rice.* pp. 55-60. G.S. Khush and J Bennett. (Eds), International Rice Research Institute, Manila, Phillipines (1992).
144. Lee, M., Murli, S., Donnelly, C.E., and Walker, G.C. Intertwining of Regulation and Function in Mutagenesis. *In: Environment, Science, and Technology: The Challenges of the 21st Century.* pp. 235-244, Com Zone Co. Ltd. (Bangkok, Thailand) (1992).
145. Ohta, T. Battista, J.R., Donnelly, C.E., and Walker, G.C. Responses of *E. coli* to DNA Damage and Stress. *In: Biotechnology and Environmental Science: Molecular Approaches,* pp. 155-164, S. Mongkolsuk, P.S. Lovett, and J. Trempy (Eds.), Plenum Press, New York, (1992).
146. Bukau, B., P. Reilly, J. McCarty, and G. C. Walker. Immunogold Localization of the DnaK Heat Shock Protein in *Escherichia coli* Cells. *J. Gen. Microbiol.* 139:95-99 (1993).
147. Gonzalez, J.E., Glucksmann, A., Reuber, T.L., and Walker, G.C. Exopolysaccharides and *Rhizobium meliloti*-alfalfa Interactions. *In: New Horizons in Nitrogen Fixation.* p. 203-206, R. Palacios, J. Mora, and W. E. Newton (Eds.), Kluwer Academic Publishers, Netherlands (1993).
148. Reuber, T.L. and Walker, G.C. The Acetyl Substituent of Succinoglycan is Not Necessary For Alfalfa Nodule Invasion by *Rhizobium meliloti* Strain Rm1021. *J. Bacteriol.* 175:3653-3655 (1993).
149. Reuber, T.L., and Walker, G.C. Biosynthesis of Succinoglycan, a Symbiotically Important Exopolysaccharide of *Rhizobium meliloti*. *Cell* 74:269-280 (1993).
150. Glazebrook, J., Ichige, A., and Walker, G.C. A *Rhizobium meliloti* Homolog of the *E. coli* Peptide-antibiotic Transport Protein SbmA Is Essential For Bacteroid Development. *Genes & Devel.* 7:1485-1497 (1993).
151. Glucksmann, M.A., Reuter, T.L., and Walker, G.C. Family of Glycosyl Transferases Needed For the Synthesis of Succinoglycan by *Rhizobium meliloti*. *J. Bacteriol.* 175:7033-7044 (1993).
152. Glucksmann, M.A., Reuber, T.L., and Walker, G.C. Genes Needed For the Modification, Polymerization, Export and Processing of Succinoglycan By *Rhizobium meliloti*: A Model for Succinoglycan Biosynthesis. *J. Bacteriol.* 175:7045-7055 (1993).
153. Murli, S., and Walker, G.C. SOS Mutagenesis. *Curr. Opin. Genet. Devel.* 3: 719-725 (1993)

154. McCarty, J.S. and Walker, G.C. DnaK Mutants Defective in ATPase Activity in Negative Regulation of the Heat-shock Response: Expression of Mutant DnaK Proteins Results in Filamentation. *J. Bacteriol.*, 176: 764-780 (1994).
155. Leigh, J.A., and Walker, G.C. Exopolysaccharides in *Rhizobium*: Synthesis, Regulation, and Symbiotic Function. *Trends in Genetics*, Vol. 10, No. 2, 63-67 (1994).
156. Reinhold, B.B., S.Y. Chan, T.L. Reuber, A. Marra, G.C. Walker, and V.N. Reinhold. Detailed Structural Characterization of Succinoglycan, the Major Symbiotically Important Exopolysaccharides of *Rhizobium meliloti* Strain Rm1021. *J. Bacteriol.*, 176:1997-2002 (1994).
157. Lee, M., Ohta, T. and Walker, G. C. A Monocysteine Approach For Probing the Structure and Interactions of the UmuD Protein. *J. Bacteriol.* 176:4825-4837 (1994).
158. Donnelly, C.E., Murli, S., and Walker, G. C. The *groE* Gene Products of *Escherichia coli* Are Dispensable for *mucA<sup>+</sup>B<sup>+</sup>*-dependent UV Mutagenesis. *Mutat. Res.*, 309:225-233 (1994)
159. Saget, B. M., and Walker, G. C. The Ada Protein Acts As Both a Positive and Negative Modulator of *Escherichia coli*'s Response to Methylating Agents. *Proc. Natl. Acad. Sci. USA*, 91: 9730-9734 (1994)
160. Saget, B, Shevell, D., and Walker, G.C. Alteration of the Lysine-178 in the Hinge Region of the *Escherichia coli* Ada Protein Interferes With Activation of *ada*, But Not *alkA*, Transcription. *J. Bacteriol.* 177:1268-1274 (1995).
161. Walker, G.C. SOS-regulated Proteins in Translesion DNA Synthesis and Mutagenesis. *Trends Biochem. Sci.* 20:416-420 (1995).
162. Zhang, J., Lee, M.H., and Walker, G.C. *p*-Azidoiodoacetanilide, a New Short Photocrosslinker That Has Greater Cysteine Specificity Than *p*-azidophenacyl bromide and *p*-azidobromoacetanilide. *Biochem. Biophys. Res. Comm.* 217: 1177-1184 (1995).
163. Chouly, C., I. J. Colquhoun, A. Joulet, G. York, G.C. Walker. NMR Studies of Succinoglycan Repeating-unit Octasaccharides from *Rhizobium meliloti* and *Agrobacterium radiobacter*. *Int. J. Biol. Macromolec.* 17: 357-363 (1995).
164. González, J.E., York, G.M. and Walker, G.C. *Rhizobium meliloti* Exopolysaccharides: Synthesis and Symbiotic Function. *Gene* 179:141-146 (1996).
165. Glazebrook, J.E., Ichige, A., and Walker, G.C. Genetic Analysis of *Rhizobium meliloti bacA-phoA* Fusion Results in Identification of *degP*: Two Loci Required for Symbiosis Are Closely Linked to *degP*. *J. Bacteriol.* 178: 745-752 (1996).
166. Walker, G.C. The SOS Response of *Escherichia coli*. *In: Escherichia coli and Salmonella typhimurium: Cellular and Molecular Biology*, Second Edition. Neidhardt, F.C., R. Curtiss III, J.L. Ingraham, E.C.C. Lin, K.B. Low, B. Magasanik, W. Reznikoff, M. Riley, M. Schaechter, and H.E. Umbarger (eds.), American Society for Microbiology, Washington, D.C. pp 1400-1416 (1996).

167. York, G.M., González, J.E., and Walker, G.C. Exopolysaccharides and Their Role in Nodule Invasion. *In: Biology of Molecular Plant-Microbe Interactions*. Stacey, G., B. Mullin, and P. M. Gresshoff (eds.), pp 325-330 (1996).
168. Zhang, J., and Walker, G.C. Identification of Elements of the Peptide Binding Site of DnaK by Peptide Crosslinking. *J. Biol. Chem.* 271: 19668-19674 (1996).
169. González, J.E., Ruehs, B.L., Walker, G.C. Low Molecular Weight EPS II of *Rhizobium meliloti* Allows Nodule Invasion of *Medicago sativa*. *Proc. Natl. Acad. Sci. USA* 93:8626-8641 (1996).
170. Opperman, T., Murli, S., and Walker, G.C. The Genetic Requirements For UmuDC-mediated Cold Sensitivity Are Distinct From Those For SOS Mutagenesis. *J. Bacteriol.* 178: 4400-4411 (1996).
171. Lee, M.H. and Walker, G.C. Interactions of *Escherichia coli* UmuD With Activated RecA Analyzed by Crosslinking UmuD Monocysteine Derivatives. *J. Bacteriol.* 178: 7285-7294 (1996).
172. Lee, M.H. Guzzo, A., and Walker, G.C. Inhibition of RecA-mediated Cleavage in Covalent Dimers of UmuD. *J. Bacteriol.* 178: 7304-7307 (1996).
173. Guzzo, A., Lee, M.H., Oda, K., and Walker, G.C. Analysis of the Region Between Amino Acids 30 to 42 of Intact UmuD by a Monocysteine Approach. *J. Bacteriol.*, 178: 7295-7303 (1996).
174. Ichige, A. and Walker, G.C. Genetic Analysis of *Rhizobium meliloti bacA* Gene: Functional Interchangeability with *Escherichia coli sbmA* Gene and Phenotypes of Mutants. *J. Bacteriol.* 179: 209-216 (1997).
175. Becker, A., S. Rüberg, H. Küster, A.A. Roxlau, M. Keller, T. Ivashina, H. Cheng, G.C. Walker, A. Pühler. The 32 kb *exp* Gene Cluster of *Rhizobium meliloti* Directing the Biosynthesis of Galactoglucan: Genetic Organization and Properties of the Encoded Gene Products. *J. Bacteriol.*, 179:1375-1384 (1997).
176. Ridout, M.J., G.J. Brownsey, G.M. York, and G.C. Walker, and V.J. Morris. Effect of *O*-acyl Substituents on the Functional Behavior of *Rhizobium meliloti* Succinoglycan. *Int. J. Biol. Macromolec.*, 20:1-7 (1997).
177. York, G., and G.C. Walker. The *Rhizobium meliloti exoK* Genes and *prsD/prsE/exsH* Genes are Components of Independent Degradative Pathways Which Contribute to Production of Low Molecular Weight Succinoglycan. *Mol. Microbiol.*, 25:117-143 (1997).
178. Natri, H.G., A. Guzzo, C. Lange, G.C. Walker, and K.L. Knight. Gly(157) in the RecA Protein is a Hotspot for Mutation-induced Constitutive Coprotease Activity for both LexA and UmuD. *Mol. Microbiol.*, 25:967-978 (1997).
179. Ferentz, A.E., T. Opperman, G.C. Walker, and G. Wagner. Dimerization of the UmuD' Protein in Solution and its Implications for the Regulation of SOS Mutagenesis. *Nature Struct. Biol.*, 4:979-983 (1997).

180. Kanola, J.T., A. Guzzo, J.-B. Gow, G.C. Walker, and K.L. Knight. Differential Cleavage of LexA and UmuD Mediated by *recA* Pr0(67) Mutants: Implications for Common LexA and UmuD Binding Sites on RecA. *J. Mol. Biol.*, 276:405-415 (1998).
181. Cheng, H.-P., and G.C. Walker. Succinoglycan Production by *Rhizobium meliloti* is Regulated Through the ExoS/ChvI Two-component Regulatory System. *J. Bacteriol.* 180:20-26 (1998).
182. York, G., H.-P. Cheng, B. Pellock, L. LeCour, G. Campbell, and G.C. Walker. Role of Exopolysaccharides in Nodule Invasion by *Rhizobium meliloti*. In *Biological Nitrogen Fixation for the 21st Century*. C. Elmerich, A. Kondorosi, W.E. Newton (eds), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp.193-198 (1998).
183. Smith, B.T., and G.C. Walker. Mutagenesis and More: *umuDC* and the *Escherichia coli* SOS Response. *Genetics*. 148: 1599-1610 (1998).
184. York, G., and G.C. Walker. The *Rhizobium meliloti* ExoK and ExsH Glycanases Depolymerize Succinoglycan Chains Efficiently During a Limited Interval After Synthesis of the Chains. *Proc. Natl. Acad. Sci. U.S.A.*, 95: 4912-4917 (1998).
185. Herman, C., D. Thévenet, P. Bouloc, R.T. Sauer, G.C. Walker, and R. D'Ari. Degradation of C-terminal-tagged Cytoplasmic Proteins by the *Escherichia coli* Protease HflB (FtsH). *Genes & Devel.*, 12:1348-1355 (1998).
186. Willis, L.B., and G.C. Walker. The *phbC* (Poly- $\beta$ -Hydroxybutyrate Synthase) Gene of *Rhizobium meliloti* and Characterization of *phbC* Mutants. *Can. J. Microbiol.*, 44:554-556 (1998).
187. Willis, L.B. and G.C. Walker. Identification of the *Rhizobium meliloti* Alcohol Dehydrogenase Gene (*adh*) and Heterologous Expression in *Alcaligenes eutrophus*. *Biochim. Biophys. Acta*, 1384:197-203 (1998).
188. York, G.M., and G.C. Walker. The Succinyl and Acetyl Modifications of Succinoglycan Influence the Susceptibility of Succinoglycan to Cleavage by the *Rhizobium meliloti* Glycanases ExoK and ExsH. *J. Bacteriol.*, 180:4184-4191 (1998).
189. Zhang, J., and G.C. Walker. Interactions of Peptides with DnaK and C-terminal DnaK Fragments Studied using Fluorescent and Radioactive Peptides. *Arch. Biochem. Biophys.*, 356:177-186 (1998).
190. Walker, G.C. Skiing the Black Diamond Slope: Progress on the Biochemistry of Translesion DNA Synthesis. *Proc. Natl. Acad. Sci. U.S.A.*, 95:10348-10350 (1998).
191. Cheng, H-P, and G.C. Walker. Succinoglycan is Required for the Initiation and Elongation of Infection Threads During Nodulation of Alfalfa by *Rhizobium meliloti*. *J. Bacteriol.*, 180:5183-5191 (1998).
192. Campbell, G.R.O., B.L. Reuhs, and G.C. Walker. Different Phenotypic Classes of *Sinorhizobium meliloti* Mutants Defective in the Synthesis of K Antigen. *J. Bacteriol.* 180:5432-5436 (1998).

193. Liu, M., J.E. González, and G.C. Walker. A Novel Screen for Isolating Exopolysaccharide Deficient Mutants. *Appl. Environ. Microbiol.*, 64: 4600-4602 (1998).
194. González, J.E., C.E. Semino, L.E. Castellano-Torres, and G.C. Walker. Biosynthetic Control of Molecular Weight in the Polymerization of the Octasaccharide Subunits of Succinoglycan, a Symbiotically Important Exopolysaccharide of *Rhizobium meliloti*. *Proc. Natl. Acad. Sci. U.S.A.*, 95: 13477-13482 (1998).
195. Pellock, B., H.-P. Cheng, G.M. York, L. LeCour, G. Campbell, L.-X. Wang, and G.C. Walker. Biosynthesis, Regulation, and Control of Molecular Weight Distribution of Symbiotically Important *Rhizobium meliloti* Exopolysaccharides, *In Biochemical Principles and Mechanisms of Biosynthesis and Biodegradation of Polymers*, A. Steinbüchel (ed.), Wiley-VCH, Weinheim/New York, pp. 104-112 (1999)
196. Ohta, T., M.D. Sutton, A. Guzzo, S. Cole, A.E. Ferentz, G.C. Walker. Mutations Affecting the Ability of the *E. coli* UmuD' Protein to Participate in SOS Mutagenesis. *J. Bacteriol.*, 181:177-185 (1999).
197. Walker, G.C. The Centennial Before the Millennium: The *Journal of Bacteriology* As a World Voice for Microbiological Research. *J. Bacteriol.*, 181:1-3 (1999).
198. Paterson, S., M.I. More, G. Pillay, C. Cellini, R. Woodgate, G.C. Walker, V.N. Iyer, and S.C. Winans. Genetic Analysis of the Mobilization and Leading Regions of the IncN Plasmids pKM101 and pCU1. *J. Bacteriol.*, 181:2572-2583 (1999)
199. Willis, L.B., and G.C. Walker. A Novel *Sinorhizobium meliloti* Operon Encodes an  $\alpha$ -glucosidase and a Periplasmic-Binding-Protein-Dependent Transport System for  $\alpha$ -glucosides. *J. Bacteriol.*, 181:4176-4184 (1999).
200. Opperman, T., S. Murli, B.T. Smith and G.C. Walker. A Model For a *umuDC*-dependent Prokaryotic DNA Damage Checkpoint. *Proc. Natl. Acad. Sci. U.S.A.*, 96:9218-9223 (1999).
201. Sutton, M.D., T. Opperman, and G.C. Walker. The *Escherichia coli* SOS Mutagenesis Proteins UmuD and UmuD' Interact Physically With the Replicative DNA Polymerase. *Proc. Natl. Acad. Sci. USA* 96:12373-12378 (1999).
202. Wang, L.-X., Wang. Y., Pellock, B., and Walker, G.C. Structural Characterization of the Symbiotically Important Low Molecular Weight Succinoglycan of *Sinorhizobium meliloti*. *J. Bacteriol.* 181:6788-6796 (1999).
203. Mortimer, M.W., T.R. McDermott, G. York, G.C. Walker, and M.L. Kahn. Citrate Synthase Mutants of *Sinorhizobium meliloti* Are Ineffective and Have Altered Cell Surface Polysaccharides. *J. Bacteriol.*, 181:7608-7613 (1999).
204. Barthel, T. K. and G.C. Walker. Inferences Concerning the ATPase Properties of DnaK and Other Hsp70s Are Affected by the ADP Kinase Activity of Copurifying Nucleoside Diphosphate Kinase. *J. Biol. Chem.* 274:36670-36678 (1999)

205. Murli, S., T. Opperman, B.T. Smith, and G.C. Walker. A Role for the *umuDC* Gene Products of *E. coli* in Increasing Resistance to DNA Damage in Stationary Phase By Inhibiting the Transition to Exponential Growth. *J. Bacteriol.* 182:1127-1135 (2000).
206. Campbell, R.O., B. Pellock, K. LeVier, L.-X. Wang, S.M. Bush, and G.C. Walker. Invasion of Alfalfa Root Nodules by Nitrogen-fixing Bacterium *Rhizobium meliloti*. In *Nitrogen Fixation: From Molecules to Crop Productivity*. F.O. Pedrosa, M. Hungria, M.G. Yates, and W.E. Newton (eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp 235-236 (2000).
207. Walker, G.C., B.T. Smith, and M.D. Sutton. The SOS Response to DNA Damage. In *Bacterial Stress Responses*. G. Storz and R. Hengge-Aronis (eds.), American Society for Microbiology, Washington, D.C., pp 131-144 (2000).
208. LeVier, K., R.W. Phillips, V. K. Grippe, R. M. Roop, and G.C. Walker. Similar Requirements of a Plant Symbiont and a Mammalian Pathogen for Prolonged Intracellular Survival. *Science*, 287:2492-2493 (2000).
209. Pellock, B., H.-P. Cheng, and G.C. Walker. Alfalfa Root Nodule Invasion Efficiency is Dependent on *Sinorhizobium meliloti* Polysaccharides. *J. Bacteriol.* 182:4310-4318 (2000).
210. Sutton, M.D., B.T. Smith, V.G. Godoy, and G.C. Walker. The SOS Response: Recent Insights into *umuDC*-dependent Mutagenesis and DNA Damage Tolerance. *Annu. Rev. Genetics*, 34:479-497 (2000).
211. Walker, G.C. Understanding the Complexity of an Organism's Responses to DNA Damage. *Cold Spring Harbor Symp. Quantit. Biol.*, 65:1-10 (2000).
212. Sutton, M.D., M. Kim, and G.C. Walker. Genetic and Biochemical Characterization of a Novel *umuD* Mutation: Insights into a Mechanism for UmuD Self-cleavage. *J. Bacteriol.*, 183:347-57 (2001).
213. Sutton, M.D., S. Murli, T. Opperman, C. Klein, and G.C. Walker. The *umuDC-dnaQ* Interaction and Its Implications for Cell Cycle Regulation and SOS Mutagenesis in *E. coli*. *J. Bacteriol.* 183:1085-1089 (2001).
214. Walker, G.C. Bryn Bridges and Mutagenesis: Exploring the Intellectual Space. *Mutat. Res.* 485: 69-81 (2001).
215. Sutton, M.D. and G.C. Walker. *umuDC*-Mediated Cold Sensitivity is a Manifestation of the Functions of the UmuD<sub>2</sub>C Complex Involved in a DNA Damage Checkpoint. *J. Bacteriol.* 183: 1215-1224 (2001).
216. Sutton, M.D., M.F. Farrow, B.M. Burton, and G.C. Walker. Genetic Interactions Between the *Escherichia coli umuDC* Gene Products and the  $\beta$  Processivity Clamp of the Replicative DNA Polymerase. *J. Bacteriol.* 183:2897-2909 (2001).
217. Sutton, M.D. and G.C. Walker. Managing DNA Polymerases: Coordinating DNA Replication, DNA Repair, and DNA Recombination. *Proc. Natl. Acad. Sci. U.S.A.* 98:8342-8349 (2001).

218. Wang, L.-X., L.G. McLean, P.H. Seeberger, and G. C. Walker. Biotin Labeling of the Symbiotically Important Succinoglycan Oligosaccharides of *Rhizobium meliloti* for Identification of Putative Plant Receptors. *Carbohydrate Res.* 333:73-78 (2001).
219. Ohmori, H, E.C. Friedberg, R.P.P. Fuchs, M. F. Goodman, F. Hanaoka, D. Hinkle, T. A. Kunkel, C.W. Lawrence, Z. Livneh, T. Nohmi, L. Prakash, S. Prakash, T. Todo, G.C. Walker, Z. Wang, and R. Woodgate. The Y-family of DNA Polymerases. *Molec. Cell*, 8:7-8 (2001).
220. Ferentz, A.E., G.C. Walker, and G. Wagner. Converting a DNA Damage Checkpoint Effector (UmuD<sub>2</sub>C) Into a Lesion Bypass Polymerase. *EMBO J.*, 20:4287-4298 (2001).
221. Barthel, T.K., J. Zhang, and G.C. Walker. ATPase Defective DnaK Derivatives That Behave Differently With Respect to ATP-induced Conformational Change and Peptide Release. *J. Bacteriol.* 183:5482-5490 (2001).
222. LeVier, K. and G.C. Walker. Genetic Analysis of *Sinorhizobium meliloti* BacA Protein: Differential Effects of Mutations on Phenotypes. *J. Bacteriol.* 183:6444-6453 (2001).
223. J. Lloret, L. Barra, G.R. Campbell, G.P. Ferguson, K. LeVier, B.J. Pellock, T.Y. Shcherban, C. Blanco, G. C. Walker. Nodule Invasion and Intracellular Survival by *Sinorhizobium meliloti*. In *Nitrogen Fixation: Global Perspectives*. T. Finan, M.R. O'Brian, D.B. Layzell, J.K. Vessey and W.E. Newton (eds.). CABI Publishing Wallingford, UK, pp 279-283 (2002).
224. Walker G.C. To Cleave Or Not To Cleave? Insights From the LexA Crystal Structure. *Mol. Cell.* 8:486-487 (2001).
225. Smith, B.T., A.D. Grossman, A.D., and G.C. Walker. Visualization of Mismatch Repair in Bacterial Cells. *Mol. Cell* 8: 1197–1206 (2001).
226. Smith, B.T., A.D. Grossman, A.D., and G.C. Walker. Localization of UvrA and the Effect of DNA Damage on the Chromosome of *Bacillus subtilis*. *J. Bacteriol.*, 184: 488-493 (2002).
227. Sutton, M.D., A. Guzzo, I. Narumi, M. Costanzo, C. Altenbach, A.E. Ferentz, W.L. Hubbell, and G.C. Walker. A Model for the Structure of the *Escherichia coli* SOS-Regulated UmuD<sub>2</sub> Protein. *DNA Repair*, 1: 77-93 (2002).
228. P. J. Beuning and G.C. Walker. "Signal Transduction in the SOS Response" in *Handbook of Cellular Signaling*, Volume 3, A. Fornace, Ed. Chapter 299, pp. 185-189. Elsevier Science, San Diego, CA. (2003).
229. Campbell, R.O., B.R. Reuhs, and G.C. Walker. Chronic Intracellular Infection by *Sinorhizobium meliloti* Requires Correct Lipopolysaccharide. *Proc. Natl. Acad. Sci. USA* 99, 6:3938-3943 (2002).
230. Sutton, M.D., I. Narumi, and G.C Walker. Posttranslational Modification of the *umuD* Subunit of *Escherichia coli* DNA Polymerase V Regulates Its Interactions With the  $\beta$  Clamp of the Replicative DNA Polymerase. *Proc. Natl. Acad. Sci. U.S.A.* 99:5307-5312 (2002).

231. Pellock, B., M. Teplitski, R. Boiney, W.D. Bauer and G.C. Walker. A LuxR Homolog Controls Production of Symbiotically Active Extracellular Polysaccharide II by *Sinorhizobium meliloti*. J. Bacteriol. 184:5067-76 (2002).
232. Ferguson, G.P., R. M. Roop II, and G.C. Walker. Deficiency of a *Sinorhizobium meliloti bacA* Mutant in Alfalfa Symbiosis Correlates with Alteration of the Cell Envelope. J. Bacteriol. 184:5625-5632 (2002).
233. Roop II, R.M., G.T. Robertson, G.P. Ferguson, L.E. Milford, M.E. Winkler, and G.C. Walker. Seeking A Niche: Putative Contributions of The *Hfq* And *BacA* Gene Products To The Successful Adaptation of The Brucellae To Their Intracellular Home. Vet. Microbiol., 90:349-363 (2002).
234. Campbell, G.O.R, H. Scheidle, L.A. Sharypova, K. M. Jones, K. Niehaus, A. Becker, and G. C. Walker. Striking Complexity of Lipopolysaccharide Defects in a Collection of *Sinorhizobium meliloti* Mutants. J. Bacteriol. 185:3853-3862 (2003).
235. T.-F. Mah, B. Pitts, B. Pellock, G. C. Walker, P. S. Stewart, and G. A. O'Toole. A Genetic Basis for *Pseudomonas aeruginosa* Biofilm Antibiotic Resistance. Nature 426:306-310 (2003).
236. Barra, L, N. Pica, K. Gouffi, G.C. Walker, C. Blanco, and A. Trautwetter. Glucose 6-Phosphate Dehydrogenase Is Required For Sucrose And Trehalose To Be Efficient Osmoprotectants In *Sinorhizobium meliloti*. FEMS Microbiol Lett. 229:183-8 (2003).
237. Godoy, V., P.J. Beuning,., and G.C. Walker. The LexA Regulatory System. Encyclopedia of Biological Chemistry. Volume 2. pp 546-550 (2004).
238. Duzen, J.M., G.C. Walker, and M. D. Sutton. Identification of Specific Amino Acid Residues in the *E. coli*  $\beta$  Processivity Clamp Involved In Interactions with DNA Polymerase III, UmuD and UmuD'. DNA Repair (Amst) 3:301-312 (2004).
239. Ferguson G.P., A. Datta, J. Baumgartner, R.M. Roop II, R. W. Carlson, G. C. Walker. Similarity to Peroxisomal Membrane Protein Family Reveals *Sinorhizobium* and *Brucella* BacA Affect Lipid A Fatty Acids. Proc. Natl. Acad. Sci. USA 101:5012-5017 (2004).
240. Bridges, B.A. and G.C. Walker. Presidential Honor for Evelyn Witkin. DNA Repair (Amst). 4;3(5):453-454 (2004).
241. Khodor, J., D.G. Halme, and G.C. Walker. A Hierarchical Biology Concept Framework: A Tool for Course Design, Assessment, and Revision. Cell Biol. Educ. 3:111-121 (2004).
242. Ferguson, G.P., A. Datta, R.W. Carlson, and G.C. Walker. Importance of Unusually Modified Lipid A in *Sinorhizobium* Stress Resistance and Legume Symbiosis. Mol. Microbiol. 56:68-80 (2005).
243. Walker, G.C. Lighting Torches in the DNA Repair Field: Development of Key Concepts. Mutat. Res. 577:14-23 (2005)

244. Halme, D.G., J. Khodor, R. Mitchell, G.C. Walker. A Small-Scale Concept-Based Laboratory Component: the Best of Both Worlds. *Cell Biol. Educ.* 3: 111-121 (2006).
245. Jarosz, D.F., V.G. Godoy, J.C. DeLaney, J.M. Essigmann, and G.C. Walker. A Single Amino Acid Governs Enhanced Activity of DinB DNA Polymerases on Damaged Templates. *Nature* 439:225-258 (2006).
246. Beuning P.J., D. Sawicka, D. Barsky, and G.C. Walker Two Processivity Clamp Interactions Differentially Alter the Dual Activities of UmuC. *Mol. Microbiol.* 59:460-474 (2006).
247. Beuning, P.J., V.G. Godoy, S.M. Simon, D.F. Jarosz, and G.C. Walker. Characterization of *E. coli* Translesion Synthesis Polymerases and Their Accessory Factors. *Methods Enzymol. DNA Repair, Part A*, 408: 318-340 (2006).
248. Godoy, V.G., D.F. Jarosz, F.L. Walker, L. A. Simmons, and G.C. Walker. *Escherichia coli* Y-family DNA Polymerases Respond to DNA Damage-Independent Inhibition of Replication Fork Progression. *EMBO J.* 25:868-79 (2006).
249. Campbell, G.R.O., M.E. Taga, K. Mistry, J. Lloret, Peter Anderson, J.R. Roth, and G.C. Walker. *Sinorhizobium meliloti* *bluB* Is Necessary for Production of 5,6-Dimethylbenzimidazole, the Lower Ligand of B<sub>12</sub>. *Proc. Natl. Acad. Sci USA.* 103:4634-4639 (2006).
250. Beuning, P.J., S.M. Simon, A. Zemla, D. Barsky, and G.C. Walker. A Non-Cleavable UmuD Variant that Acts as a UmuD' Mimic. *J. Biol. Chem.* 281:9633-9640 (2006).
251. Ferguson, G.P., A. Jansen, V.L. Marlow and G.C. Walker. BacA-Mediated Bleomycin Sensitivity in *Sinorhizobium meliloti* is Independent of the Unusual Lipid A Modification *J. Bacteriol.* 188:3143-3148 (2006).
252. Gibson, K.E., G.R.O. Campbell, J. Lloret and G.C. Walker. The *Sinorhizobium meliloti* Sensor Kinase CbrA is a Stationary Phase Regulator of Cell-Surface Physiology and Legume Symbiosis. *J. Bacteriol.* 188:4508-4521 (2006).
253. Waters, L., and G.C. Walker, Critical Mutagenic Translesion Synthesis DNA Polymerase Rev1 Highly Expressed During G2/M. *Proc. Natl. Acad. Sci USA.* 103:8971-8976 (2006).
254. Staehelin, C., L.S. Forsberg, W. D'Haese, M.-Y. Gao, R.W. Carlson, Z.-P. Xie, B.J. Pellock, K.M. Jones, G.C. Walker, W.R. Streit, and W.J. Broughton. Exo-oligosaccharides of *Rhizobium* sp. NGR234 are Required for Symbiosis with Various Legumes. *J. Bacteriol.* 188:6168-6178 (2006).
255. Barra, L., C. Fontenelle, G. Ermel, A. Trautwetter, G.C. Walker, and C. Blanco. Interrelations Between Glycine Betaine Catabolism and Methionine Biosynthesis. *J. Bacteriol.* 188:7195-7204 (2006).
256. D'Souza, S., and G.C. Walker. Novel Role for the C-Terminus of *Saccharomyces cerevisiae* Rev1 in Mediating Protein-Protein Interactions. *Mol. Cell. Biol.* 26:8173-8182 (2006).

257. Simmons, L.A., A.D. Grossman and G.C. Walker. Replication is Required for the RecA Localization Response to DNA Damage in *Bacillus subtilis*. Proc. Natl. Acad. Sci. USA. 104:1360-1365 (2007).
258. Jarosz, D.F., P. J. Beuning, S.E. Cohen, and G.C. Walker. Y-Family DNA Polymerases in *Escherichia coli*. Trends Microbiol. 15:70-77 (2007).
259. Parent, M.A., R. Goenka, E. Murphy, K. LeVier, N. Carreiro, B. Golding, G. Ferguson, R. Martin. Roop II, G.C. Walker, and C.L. Baldwin. *Brucella abortus* *bacA* Mutant Induces Greater Pro-inflammatory Cytokines than the Wild-Type Parent Strain. Microbes Infect. 9:55-62 (2007).
260. Jones, K.M. J. Lloret, J.R. Daniele, and G.C. Walker. Characterization of Type IV Secretion System Mutants of *Sinorhizobium meliloti* strain 1021. J. Bacteriol. 189:2133-2118 (2007).
261. Davies, B.W. and G.C. Walker. Identification of Novel *Sinorhizobium meliloti* Mutants Compromised for Oxidative Stress Protection and Symbiosis. J. Bacteriol. 189:2110-2113 (2007).
262. Davies, B.W. and G.C. Walker. Disruption of *sitA* Compromises *Sinorhizobium meliloti* for Manganese-Dependent Oxidative Stress Protection. J. Bacteriol. 189:2101-2109 (2007).
263. Gibson, K.E., M.J. Barnett, C.J. Toman, S.R. Long, and G.C. Walker. The Symbiosis Regulator CbrA Modulates a Complex Regulatory Network Affecting the Flagellar Apparatus and Cell Envelope Proteins. J. Bacteriol. 189:3591-3602 (2007).
264. Taga, M.E., N.A. Larsen., A.R. Howard-Jones, C.T. Walsh, and G.C. Walker. BluB Cannibalizes Flavin to Form the Lower Ligand of Vitamin B<sub>12</sub>. Nature. 446:449-453 (2007).
265. Neeley, W.L., S. Delaney, Y.O. Alekseyev, D.F. Jarosz, J.C. Delaney, G.C. Walker, and J.M. Essigmann. DNA Polymerase V Allows Bypass of Toxic Guanine Oxidation Products in vivo. J. Biol. Chem. 282:12741-12748 (2007).
266. Jarosz, D.F., V.G. Godoy, and G.C. Walker. Proficient and Accurate Bypass of Persistent DNA Lesions by DinB DNA Polymerases. Cell Cycle. 6:817-22 (2007).
267. Jones, K.M. H. Kobayashi, B.W. Davies, M.E. Taga, and G.C. Walker. Intracellular Symbiosis by Rhizobial Bacteria: Invasion and Endocytosis. Nature Rev. Microbiol. 5:619-633 (2007).
268. Godoy, V.G. D.F. Jarosz, S.M. Simon, A. Abyzov, V. Ilyin and G.C. Walker. The Mutagenic Potential of DinB is Modulated by UmuD and RecA. Mol Cell. 28:1058-70 (2007).
269. Kobayashi, H., L.A. Simmons, D.S. Yuan, W.J. Broughton and G.C. Walker. Multiple Ku orthologs Mediate DNA Non-Homologous End-joining in the Free-living Form and During Chronic Infection of *Sinorhizobium meliloti*. Mol. Microbiol. 67:350-363 (2008).

270. Davies, B.W. and G.C. Walker. A Highly Conserved Protein of Unknown Function Plays an Essential Role for *Sinorhizobium meliloti* in Symbiosis and Environmental Stress Protection. *J. Bacteriol.* 190:1118-1123 (2008).
271. Taga, M.E. and G.C. Walker. Pseudo-B<sub>12</sub> Joins the Cofactor Family. *J. Bacteriol.* 190:1157-1159 (2008).
272. Jones, K.M., N. Sharapova, D.P. Lohar, J.Q. Zhang, K.A. VandenBosch, and G.C. Walker. Differential Response of the Plant *Medicago truncatula* to its Symbiont *Sinorhizobium meliloti* or an Exopolysaccharide-Deficient Mutant. *Proc. Natl. Acad. Sci. USA.* 105:704-709 (2008).
273. Simon, S.M., F. J. R. Sousa, R. Mohana-Borges, G.C. Walker. Regulation of *E. coli* SOS Mutagenesis by Dimeric Intrinsically Disordered *umuD* Gene Products. *Proc. Natl. Acad. Sci. USA.* 105:1152-1157 (2008).
274. Simmons, L.A., B.W. Davies, A.D. Grossman, and G.C. Walker.  $\beta$ -Clamp Directs Localization of Mismatch Repair in *Bacillus subtilis*. *Mol. Cell* 29:291-301 (2008).
275. Kosarek, J.N., R.V. Woodruff, A. Rivera-Begeman, C. Guo, S. D'Souza, E.V. Koonin, G.C. Walker, and Errol C. Friedberg. Comparative Analysis of *in vivo* Interactions Between Rev1 Protein and Other Y-Family DNA Polymerases in Animals and Yeasts. *DNA Repair (Amst).* 7:439-451 (2008).
276. Wassem, R., H. Kobayashi, K. Kambara, A. Le Quéré, G.C. Walker, W.J. Broughton, and W.J. Deakin. TtsI Regulates Symbiotic Genes in *Rhizobium* species NGR234 by Binding to *tts*-Boxes. *Mol. Microbiol.* 68:736-748 (2008).
277. D'Souza, S., L.S. Waters, and G.C. Walker Novel Conserved Motifs in Rev1 C-Terminus are Required for Mutagenic DNA Damage Tolerance. *DNA Repair (Amst).* 7:1455-70 (2008).
278. Simmons, L.A., J.J. Foti, S.E. Cohen, and G.C. Walker. The SOS Regulatory Network, *In EcoSal: Escherichia coli and Salmonella: Cellular and Molecular Biology.* (Eds.) Böck, A., R. Curtiss III, J.B. Kaper, P.D. Karp, F.C. Neidhardt, T. Nyström, J.M. Schlauch, and C.L. Squires. <http://www.ecosal.org/>. ASM Press, Washington, D.C.
279. Jones, K.M. and G.C. Walker. Responses of the Model Legume *Medicago truncatula* to the Rhizobial Exopolysaccharide Succinoglycan. *Plant Signaling & Behavior* 3: 888-890 (2008).
280. Simmons, L.A., A.D. Grossman and G.C. Walker. Clp and Lon proteases occupy distinct subcellular positions in *Bacillus subtilis*. *J. Bacteriol.* 190:6758-6768 (2008).
281. Gibson, K.E., H. Kobayashi, and G.C. Walker. Molecular Determinants of a Symbiotic Chronic Infection. *Annu. Rev. Genetics* 42:413-441 (2008).
282. Domenech, P., H. Kobayashi, K. Le Vier, G.C. Walker, and C.E. Barry III. BacA: an ABC transporter Involved in Maintenance of Chronic Murine Infections with *Mycobacterium tuberculosis*. *J. Bacteriol.* 191:477-85 (2009).

283. Cohen, S.E., V.G. Godoy, and G.C. Walker. Transcriptional Modulator NusA Interacts with Translesion DNA Polymerases in *Escherichia coli*. *J. Bacteriol.* 191:665-72 (2009).
284. Simmons, L.A., A.I. Goranov, H. Kobayashi, B.W. Davies, D.S. Yuan, A.D. Grossman, and G.C. Walker. A Comparison of Responses to Double-strand Breaks Between *Escherichia coli* and *Bacillus subtilis* reveals different requirements for SOS induction. *J. Bacteriol.* 191:1152-61 (2009).
285. Foti, J.J., L.A. Simmons, P.J. Beuning, and G.C. Walker. Signal Transduction in the *Escherichia coli* SOS Response.” in *Handbook of Cellular Signaling, Volume 3*, A. Fornace and M. Karin, Eds.. Elsevier Science, San Diego, CA. *Handbook of Cell Signaling*. Volume 3, second edition, Chapter 258, pp. 2127-2136. Elsevier Science (2009).
286. Marlow, V.L., A.F. Haag, H. Kobayashi, V. Fletcher, M. Scocchi, G.C. Walker, and G.P. Ferguson. Essential role for the BacA Protein in the Uptake of a Truncated Eukaryotic Peptide in *Sinorhizobium meliloti*. *J. Bacteriol.* 191:1519-1527 (2009).
287. Waters, L.S., B.K. Minesinger, M.E. Wiltrout, S. D’Souza, R.V. Woodruff, and G.C. Walker. Eukaryotic Translesion Polymerases: Roles and Regulation in DNA Damage Tolerance. *Microbiol. Mol. Biol. Rev.* 73: 134–154 (2009).
288. Shurtleff, B.W., J.N. Ollivierre, M. Tehrani G.C. Walker, P.J. Beuning. Steric Gate Variants of UmuC Confer UV Hypersensitivity on *E. coli*. *J. Bacteriol.* 191:4815-23 (2009).
289. Kobayashi, H., N.J. De Nisco, P. Chien, L.A. Simmons, and G.C. Walker. *Sinorhizobium meliloti* CpdR1 is Critical for Coordinating Cell-Cycle Progression and the Symbiotic Chronic Infection. *Mol. Microbiol.* 73:586-600 (2009).
290. Beuning, P.J., S. Chan, L.S. Waters, H. Addepalli, J.N. Ollivierre, and G.C. Walker. Characterization of Novel Alleles of the *E. coli umuDC* genes Identifies Additional Interaction Sites of UmuC with the Beta Clamp. *J. Bacteriol.* 191: 5910–5920 (2009).
291. Jarosz, D.F., S.E. Cohen, J.C. Delaney, J.M. Essigmann, and G.C. Walker. DinB Variant Reveals Diverse Physiological Consequences of Incomplete TLS Extension by a Y-Family DNA Polymerase. *Proc. Natl. Acad. Sci. USA* 106:21137-21142 (2009).
292. Davies, B.W., M.A. Kohanski, L.A. Simmons, J.A. Winkler, J.J. Collins, and G.C. Walker. Hydroxyurea Induces Hydroxyl Radical-mediated Cell Death in *Escherichia coli*. *Mol. Cell* 36:845-60 (2009).
293. Cohen, S.E. and G.C. Walker. The Transcription Elongation Factor NusA is Required for Stress-induced Mutagenesis in *Escherichia coli*. *Curr. Biol.* 20: 80–85 (2010).
294. Bomar, M.G., S. D’Souza, M. Bienko, I. Dikic, G.C. Walker, and P. Zhou. Unconventional Ubiquitin Recognition by the Ubiquitin-Binding Motif within the Y-Family DNA Polymerases iota and Rev1. *Mol. Cell* 37:408-417 (2010).

295. Barra-Bily, L., S.P. Pandey, A. Trautwetter, C. Blanco, and G.C. Walker. The *Sinorhizobium meliloti* RNA chaperone Hfq Mediates Symbiosis of *S. meliloti* and alfalfa. *J. Bacteriol.* 192:1710-1718 (2010).
296. Barra-Bily, L., C. Fontenelle, G. Jan, M. Flechard, A. Trautwetter, S.P. Pandey, G.C. Walker, and C. Blanco. Proteomic Alterations Explain Phenotypic Changes in *Sinorhizobium meliloti* Lacking the RNA Chaperone Hfq. *J. Bacteriol.* 192:1719-29 (2010).
297. Foti J.J. and G.C. Walker. SnapShot: DNA polymerases I prokaryotes. *Cell.* 141:192-192 (2010).
298. Foti J.J. and G.C. Walker. SnapShot: DNA polymerases II mammals. *Cell* 141:370-370 (2010).
299. Pillon, M.C., J.J. Lorenowicz, M. Uckelmann, A.D. Klocko, R.R. Mitchell, Y.S. Chung, P. Modrich, G.C. Walker, L.A. Simmons, P. Friedhoff, and A. Guarné. Structure of the Endonuclease Domain of MutL: Unlicensed to Cut. *Mol. Cell.* 39:145-51 (2010).
300. Foti, J.J., A.M. DeLucia, C.M. Joyce, and G.C. Walker. A Non-Covalent Step In the *Escherichia coli* DinB Template Slippage Pathway Is Inhibited By UmuD<sub>2</sub>. *J. Biol. Chem.* 285:23086-95 (2010).
301. Cohen, S.E, C.A. Lewis, R.A. Mooney, M.A. Kohanski, J.J. Collins, R. Landick and G.C. Walker. Roles for the Transcription Elongation Factor NusA in Both DNA Repair and Damage Tolerance Pathways in *Escherichia coli*. *Proc. Natl. Acad. Sci. USA.* 107:15517-15522 (2010).
302. Woodruff, R.V., M.G. Bomar, S. D'Souza, P. Zhou, G.C. Walker. The Unusual UBZ Domain of *S. cerevisiae* Polymerase  $\eta$  DNA Repair (Amst). **9: 1130–1141** (2010).
303. Taga, M.E. and G.C. Walker. *Sinorhizobium meliloti* Requires a Cobalamin-Dependent Ribonucleotide Reductase for Symbiosis with its Plant Host. *Mol. Plant-Microbe Interact.* 23:1643-1654 (2010).
304. Davies, B.W., C. Köhrer, A.I. Jacob, L.A. Simmons, J. Zhu, L.M. Aleman, U.L. RajBhandary, and G.C. Walker. Role of *Escherichia coli* YbeY, a Highly Conserved Protein, in rRNA Processing. *Mol. Microbiol.* 78:506-518 (2010).
305. Doles, J., T.G Oliver, G. Hsu, T. Jacks, G.C. Walker, and M.T Hemann, Rev3 Suppression Sensitizes Drug Resistant Lung Tumors to Chemotherapy. *Proc. Natl. Acad. Sci. U.S.A.* 107:20786-20791 (2010).
306. Xie, K., J. Doles, M.T. Hemann, and G.C. Walker. Error-Prone Translesion Synthesis Mediates Acquired Chemoresistance. *Proc. Natl. Acad. Sci. U.S.A.* 107:20792-20797 (2010).
307. Wiltrout, M.E. and G.C. Walker. The DNA Polymerase Activity of *Saccharomyces cerevisiae* Rev1 is Biologically Significant. *Genetics.* 187:21-35 (2011).

308. Anderson, W.A., U. Banerjee, C.L Drennan, S.C.R, Elgin, I.R. Epstein, J. Handelsman, G.F. Hatfull, R. Losick, D.K O'Dowd, B.M. Olivera, S.A. Strobel, G.C. Walker, I.M. Warner. Changing the Culture of Science Education at Research Universities. *Science*. 331:152-153 (2011).
309. Wiltrout, M.E and G.C. Walker: Proteasomal Regulation of the Mutagenic Translesion DNA Polymerase, *Saccharomyces cerevisiae* Rev1. *DNA Repair (Amst)*. 10: 169-175 (2011).
310. Cohen, S.E. and G.C. Walker. New Discoveries Linking Transcription to DNA Repair and Damage Tolerance Pathways. *Transcription*. 2:37-40 (2011).
311. Pandey, S.P., B.K. Minesinger, and G.C. Walker. A Highly Conserved Protein of Unknown Function in *Sinorhizobium meliloti* Affects sRNA Regulation Similar To Hfq. *Nucleic Acids Res*. 39:4691-4708 (2011).
312. Ardisson, S., H. Kobayashi, K. Kambara, C. Rummel, K. D. Noel, G.C. Walker, W.J. Broughton, and W.J. Deakin. Role of BacA in lipopolysaccharide synthesis, peptide transport and nodulation by *Rhizobium* sp. NGR234. *J. Bacteriol*. 193(9):2218-2228 (2011).
313. Foti, J.J., and G.C. Walker. Efficient Extension of Slipped DNA Intermediates by DinB (Pol IV) is Required to Escape Primer Template Realignment by DnaQ. *J. Bacteriol*. 193:2637-2641 (2011).
314. Modi, S.R., D.M. Camacho, M.A. Kohanski, G.C. Walker, and J.J. Collins. Functional Characterization of Bacterial sRNAs Using a Network Biology Approach. *Proc. Natl. Acad. Sci U.S.A.* 108:15522-15527 (2011).
315. Anderson WA, R.M. Amasino, M. Ares Jr, U. Banerjee, B. Bartel, V.G. Corces, C.L. Drennan, S.C. Elgin, I.R. Epstein, E. Fanning, L.J. Guillette Jr, J. Handelsman, G.F. Hatfull, R.R. Hoy, D. Kelley, L.A. Leinwand, R. Losick, Y. Lu, D.G. Lynn, C. Neuhauser, D.K. O'Dowd, T. Olivera, P. Pevzner, R.R. Richards-Kortum, J. Rine, R.L. Sah, S.A. Strobel, G.C. Walker, D.R. Walt, I.M. Warner, S. Wessler, H.F. Willard, R.N. Zare. Competencies: a Cure for Pre-med Curriculum. *Science*. 334:760-761 (2011).
316. Foti, J.J., B. Devadoss, J. A. Winkler, J.J. Collins, and G.C. Walker. Oxidation of the Guanine Nucleotide Pool Underlies Cell Death by Bactericidal Antibiotics. *Science*. 336:315-319 (2012).
317. Yu, T.-Y., K.C Mok, K.J. Kennedy, J. Valton, K.S. Anderson, G.C. Walker, and M.E. Taga. Active site residues critical for flavin binding and 5,6-dimethylbenzimidazole biosynthesis in the flavin destructase enzyme BluB. *Protein Sci*. 21:839-849 (2012).
318. Wojtaszek, J., J. Liu, S. D'Souza, S. Wang, Y. Xue, G.C. Walker, P. Zhou. Multifaceted Recognition of Vertebrate Rev1 by Translesion Polymerases  $\zeta$  and  $\kappa$ . *J. Biol. Chem*. 287:26400-26408. (2012).
319. Pozhidaeva, A., Y. Pustovalova, S. D'Souza, I. Bezsonova, G.C. Walker, and D.M. Korzhnev. NMR Structure and Dynamics of the C-terminal Domain from Human Rev1 and its Complex with DNA Polymerase  $\eta$ . *Biochemistry*. 51:5506-5520 (2012).

320. Wojtaszek, J., C.-J. Lee, S. D'Souza, B. Minesinger, H. Kim, A.D. D'Andrea, G.C. Walker, and P. Zhou. Structural basis of Rev1-mediated assembly of a quaternary vertebrate translesion polymerase complex consisting of Rev1, heterodimeric Pol  $\zeta$  and Pol  $\kappa$ . *J. Biol. Chem.* 287:33836-33846 (2012).
321. Jacob, A.I., C. Köhrer, B.W. Davies, U.L. RajBhandary, and G.C. Walker. Conserved Bacterial RNase YbeY Plays Key Roles in 70S Ribosome Quality Control and 16S rRNA Maturation. *Mol. Cell.* 49:427-438 (2013).
322. Pini, F., B. Frage, L. Ferri, N.J. De Nisco, S.S. Mohapatra, L. Taddei, A. Fioravanti, F. Dewitte, M. Galardini, M. Brillì, V. Villeret, M. Bazzicalupo, A. Mengoni, G.C. Walker, A. Becker, and E. G. Biondi. The essential DivJ/CbrA kinase and PleC phosphatase system controls DivK phosphorylation and symbiosis in *Sinorhizobium meliloti*. *Mol. Microbiol.* 90:54-71 (2013).
323. Sadowski, C. D. Wilson, G.C. Walker, and K.E. Gibson. The *Sinorhizobium meliloti* Sensor Histidine Kinase CbrA Coordinates Cell Cycle Progression Through the Response Regulator DivK. *Microbiology.* 90:54-71 (2013).
324. Xu, X., K. Xie, X.-Q. Zhang, E.M. Pridgen, G.Y. Parke, D.S. Cuia, J. Shia, J. Wu, P.W. Kantoff, S.J. Lippard, R. Langer, G.C. Walker, and O.C. Farokhzad. Enhancing Tumor Cells Response to Chemotherapy through Nanoparticle-Mediated Co-delivery of siRNA and Cisplatin Prodrug. *Proc. Natl. Acad. Sci. U.S.A.* 110:18638-18643 (2013).
325. Arnold, M.F.F., P. Caro-Hernandez, Karen Tan, G. Runti, S. Wehmeier, M. Scocchi, W.T. Doerrler, G.C. Walker, and G.P. Ferguson. Enteric YaiW Is a Surface Exposed Outer Membrane Lipoprotein that Affects Sensitivity to an Antimicrobial Peptide. *J. Bacteriol.* 196:436-444 (2014).
326. Opperman, T.J., S.M. Kwasny, H.-S. Kim, S. Nguyen, C. Houseweart, S. D'Souza, G.C. Walker, N.P. Peet, H. Nikaido, and T.L. Bowlin. Characterization of a Novel Pyranopyridine Inhibitor of the AcrAB Efflux Pump of *Escherichia coli*. *Antimicrob. Agents Chemother.* 58:722-733 (2014).
327. De Nisco, N.J., R.P. Abo, C.M. Wu, J. Penterman, and G.C. Walker. Global Analysis of Cell Cycle Gene Expression of the Legume Symbiont *Sinorhizobium meliloti*. *Proc. Natl. Acad. Sci. U.S.A.* 111:3217-3224 (2014).
328. Penterman, J., R.P. Abo, N.J. De Nisco, M.F. F. Arnold, R. Longhi, M. Zanda, and G. C. Walker. Host Plant Peptides Elicit a Transcriptional Response to Control the *Sinorhizobium meliloti* Cell Cycle During Symbiosis. *Proc. Natl. Acad. Sci. U.S.A.* 111:3561-3566 (2014).
329. Pandey, S.P., J.A. Winkler, H. Li, D. M. Camacho, J.J. Collins, and G.C. Walker. Central Role for RNase YbeY in Hfq-Dependent and Hfq-Independent Small-RNA Regulation in Bacteria. *BMC Genomics* 15:121 (2014).
330. Dwyer, D.J., P. Belenky, J.H. Yang, I.C. MacDonald, J.D. Martell, N. Takahashi, C.T.Y. Chan, M.A. Lobritz, D. Braff, E.G. Schwarz, J.D. Ye, M. Pati, M. Vercruyse, P.S. Ralifo, K.R. Allison, A.S. Khalil, A.Y. Ting, G.C. Walker, and

- J.J. Collins. Antibiotics induce redox-related physiological alterations as part of their lethality. *Proc. Natl. Acad. Sci. U.S.A.* 111:2100-2109 (2014).
331. Shrivastav, N., B.I. Fedeles, D. Li, J.C. Delaney, L.E. Frick, J.J. Foti, G.C Walker, J.M. Essigmann . A Chemical Genetics Analysis of the Roles of Bypass Polymerase DinB and DNA Repair Protein AlkB in Processing  $N^2$ -Alkylguanine Lesions In Vivo. *PLoS One.* 9: e94716 (2014).
332. Vercruyse, M., C. Köhrer, B.W. Davies, M.F.F. Arnold, J.J. Mekalanos, U.L. RajBhandary, G.C. Walker. The Highly Conserved Bacterial RNase YbeY is Essential in *Vibrio cholerae*, Playing a Critical Role in Virulence, Stress Regulation, and RNA Processing. *PLoS Pathogens.* 10:e1004 (2014).
333. Kath, J.E., S. Jergic, J.M.H. Heltzel, D.T. Jacob, N.E. Dixon, M.D. Sutton, G.C. Walker, and J.J. Loparo. Polymerase Exchange on Single DNA Molecules Reveals Processivity Clamp Control of Translesion Synthesis. *Proc. Natl. Acad. Sci. U.S.A.* 111:7647-52 (2014).
335. Penterman. J., P.K. Singh, and G.C. Walker. Biological Cost of Pyocin Production During the SOS response in *Pseudomonas aeruginosa*. *J. Bacteriol.* 196:3351-3359 (2014).
334. Dwyer, D.J., J.J. Collins, and G.C. Walker. Unraveling the Physiological Complexities of Antibiotic Lethality. *Ann. Rev. Pharmacol. & Toxicol.* 55:313-32 (2015).
335. Pini, F., N.J. De Nisco, L. Ferri, J. Penterman, A. Fioravanti, M. Brillì, A. Mengoni, M. Bazzicalupo, P.H. Viollier, G.C. Walker; E.G. Biondi. Wiring the Network: Cell Cycle Control by the Master Regulator CtrA in a Symbiotic Bacterium. *PLoS Genetics.* 15:11(5):e1005232 (2015).
336. Price, P.A., H.R. Tanner, B.A. Dillon, M. Shabab , G.C. Walker, J.S. Griffiths. A Rhizobial Peptidase Cleaves Host Peptides. *Proc. Natl. Acad. Sci. U.S.A.* 112:15244-15249 (2015).
337. Belenky, P., J.D. Ye, C.B.M. Porter, N.R. Cohen, M.A. Lobritz, T. Ferrante, S. Jain, B.J. Korry, E.G. Schwarz, G.C. Walker and J.J. Collins. Bactericidal Antibiotics Induce Toxic Metabolic Perturbations that Lead to Cellular Damage. *Cell Reports.* 3:13:968-980. (2015).
338. D'Souza, S., K. Yamanaka, and G. C. Walker. Non Mutagenic and Mutagenic DNA Damage Tolerance. *Cell Cycle.* 15:314-315 (2016).
339. Pustovalova, Y., M.T.Q. Magalhães, S. D'Souza, A.A. Rizzo, G. Korza, G.C. Walker, and D. M. Korzhnev. Interaction between the Rev1 C-terminal Domain and the PolD3 Subunit of Pol $\zeta$  Suggests a Mechanism of Polymerase Exchange upon Rev1/Pol $\zeta$ -Dependent Translesion Synthesis. *Biochemistry.* 55:2043-2053 (2016).

340. Shabab, M. M.F.F. Arnold, J. Penterman, A.J. Wommack, H.T. Bocker, P.A. Price, J.S. Griffiths, E.M. Nolan, and G.C. Walker. Disulfide Crosslinking Influences Symbiotic Activities of Nodule Peptide NCR247. *Proc. Natl. Acad. Sci. U.S.A.* 113:10157-10162 (2016).
341. Vercruyse, M., C. Köhrer, Y. Shen, S. Proulx, A. Ghosal, B. W. Davies, U.L. RajBhandary, G.C. Walker. Identification of YbeY-Protein Interactions Involved in 16S rRNA Maturation and Stress Regulation in *Escherichia coli*. *MBio.* 8;7(6). pii: e01785-16 (2016).
342. Ghosal A., C. Köhrer, V.M.P. Babu, K. Yamanaka, B.W. Davies, A.I. Jacob, D.J. Ferullo, C.C. Gruber, M. Vercruyse and G.C. Walker: C21orf57 is a human homologue of bacterial YbeY proteins. *Biochem. Biophys. Research Commun.* 484:612-617 (2017).
343. Chatterjee, N. and G.C. Walker. Mechanisms of DNA damage, repair and mutagenesis. *Environ. Mol. Mutagenesis*. In press.
344. Sail, V., A.A. Rizzo, N. Chatterjee, R.C. Dash, Z. Ozen, G.C. Walker, D.M. Korzhnev, and M.K. Hadden. Identification of small molecule translesion synthesis inhibitors that target the Rev1-CT/RIR protein-protein interaction. Submitted.
345. Yamanaka, K. , N. Chatterjee, M.T. Hemann, and G.C. Walker. Inhibition of mutagenic translesion synthesis: A possible strategy for improving chemotherapy? Submitted.

## BOOKS

1. Friedberg, E.C., G.C. Walker, and W. Siede. *DNA Repair and Mutagenesis*. American Society for Microbiology, Washington, D.C. (1995).
2. Friedberg, E.C., G.C. Walker, W. Siede, R.D. Wood, R.A. Schultz, T. Ellenberger. *DNA Repair and Mutagenesis: Second Edition*. American Society for Microbiology, Washington, D.C. (2006).

## BOOK EDITED

1. *Frontiers in Microbiology*, Edited by G. C. Walker and D. Kaiser, American Society for Microbiology, Washington, D.C. (1993).