

KATHLEEN JANET DANNA

Education:

- B.S.: Chemistry (with highest honors), New Mexico Institute of Mining and Technology, 1967
- Ph.D.: Department of Microbiology, Johns Hopkins University, 1972. Dissertation in the laboratory of Nobel laureate, Dr. Daniel Nathans: Specific Cleavage of Simian Virus 40 DNA by Restriction Endonuclease of *Hemophilus influenzae*

Academic Positions:

- 1972-1973: Research Fellow, Rijksuniversiteit-Gent, Ghent, Belgium
- 1973-1975: Research Fellow, Department of Biology, Massachusetts Institute of Technology, Cambridge, MA
- 1975-1983: Assistant Professor, Department of Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder
- 1984-1985: Sabbatical research at CSIRO, Division of Plant Industry, Canberra, Australia
- 1992-1993: Sabbatical research at Northern Arizona University, Flagstaff, AZ
- 1983-2004 Associate Professor, Department of Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder
- 2004 – present Retired; Sr. Research Associate, Ecology and Evolutionary Biology, University of Colorado at Boulder

Fellowships, Awards, Honors:

- Central States Universities Honors Program for College Seniors at Argonne National Laboratory, 1967
- Who's Who in American Colleges and Universities, 1967
- USPHS Predoctoral Fellowship, 1969-1972
- European Molecular Biology Organization Postdoctoral Fellowship, 1972-1973
- Wilson S. Stone Memorial Award for Basic Biomedical Research, 1973
- Damon Runyon Memorial Fund Postdoctoral Research Fellowship, 1973-1974
- Who's Who of American Women
- Who's Who in Frontiers of Science and Technology
- Paper [Danna, K. and D. Nathans (1971) Specific Cleavage of Simian Virus 40 DNA by Restriction Endonuclease of *Hemophilus Influenzae*. *Proc. Natl. Acad. Sci., USA* **68**:2913-2917] was featured in two publications in 1993: "Landmarks in Research" feature for *The Journal of NIH Research* **5**:68-74 and *Outstanding Papers in Biology*, Current Biology, Ltd.
- NSF Visiting Professorship for Women (VPW) sabbatical grant, 1992-93
- Early work was featured in the Proceedings of the National Academies of Sciences, Classics of the Scientific Literature series, 2003 (<http://www.pnas.org/misc/classics3.shtml>)

National Professional Activities and Service:

- Consulting for Molecular Biosystems, Inc., San Diego, 1982-1983
- Review Panel for Ford Foundation Postdoctoral Fellowships for Minorities, administered by the National Research Council, National Academy of Sciences, 1983-1984, 1987
- Reviewing grant proposals:

National Science Foundation, USDA, CIRB

Reviewing manuscripts:

Molecular and Cell Biology, Journal of Virology, Proceedings of the National Academy of Sciences USA, Nucleic Acids Research, Applied Biochemistry and Biology

Edited book chapter:

Berkaloff, A., J. Bourget, P. Favard and J.-C. Lacroix: Viruses and plasmids. IN: *Biology and Physiology of Cells* (English edition), W.H. Freeman

Review Panel, NSF Presidential Young Investigator Award, 1986

Review Panel, NSF, Undergraduate Research Opportunities, 1989

Review Panel, DOE/SERI Annual Review of Aquatics Species Subprogram, 1989

Chaired session at the Third Biennial Conference on Molecular and Cellular Biology of the Soybean, July 23-25, 1990

Member, Institutional Biosafety Committee for SERI, 1987-1990

Member, Institutional Biosafety Committee for Syntex Chemicals, 1988-1990

Review Panel, HHMI Undergraduate Program, 1992, 1993

PUBLICATIONS

- (1) Danna, K. and D. Nathans (1971) Specific cleavage of simian virus 40 DNA by restriction endonuclease of *Hemophilus influenzae*. Proc. Natl. Acad. Sci. USA 68:2913-2917.
- (2) Nathans, D. and K.J. Danna (1972) Studies of SV40 DNA. III. Differences in DNA from various strains of SV40. J. Mol. Biol. 64:515-518.
- (3) Nathans, D. and K.J. Danna (1972) Specific origin in SV40 DNA replication. Nature New Biology 236:200-202.
- (4) Danna, K.J. and D. Nathans (1972) Bidirectional replication of simian virus 40 DNA. Proc. Natl. Acad. Sci. USA 9:3097-3100.
- (5) Sack, G.H., Jr., O. Narayan, K.J. Danna, L.P. Weiner and D. Nathans (1973) The nucleic acid of an SV40-like virus isolated from a patient with progressive multifocal leukoencephalopathy. Virology 61:345-350.
- (6) Danna, K.J., G.H. Sack, Jr. and D. Nathans (1973) Studies of SV40. VII. A cleavage map of the SV40 genome. J. Mol. Biol. 78:363-376.
- (7) Khoury, G., M.A. Martin, T.N.H. Lee, K.J. Danna and D. Nathans (1973) A map of simian virus 40 transcription sites expressed in productively infected cells. J. Mol. Biol. 78:377-389.
- (8) Nathans, D., S.P. Adler, W.W. Brockman, K.J. Danna, T.N.H. Lee and G.H. Sack, Jr. (1973) Mapping the SV40 genome. IN: *Virus Research* (C.F. Fox and W.S. Robinson, eds.), Academic Press, New York. pp. 61-69.
- (9) Fiers, W., K.J. Danna, R. Rogiers, A. Van de Voorde, J. Van Herreweghe, H. Van Heuverswyn, G. Volckaert and R. Yang (1974) Approaches to the sequence determination of SV40 DNA. Cold Spring Harbor Symp. Quant. Biol. 39:179-186.
- (10) Nathans, D., S.P. Adler, W.W. Brockman, K.J. Danna, T.N.H. Lee and G.H. Sack, Jr. (1974) Use of restriction endonucleases in analyzing the genome of simian virus 40. Fed. Proc. 33:1135-1139.

- (11) Roberts, B.E., M. Gorecki, R.C. Mulligan, K.J. Danna, S. Rosenblatt and A. Rich (1975) Simian virus 40 directs synthesis of authentic viral polypeptides in a linked transcription-translation cell-free system. *Proc. Natl. Acad. Sci. USA* 72:1922-1926.
- (12) Yang, R., K. J. Danna, A. Van de Voorde and W. Fiers (1975) Location of the small restriction fragments Hind-L, Hind-M, and Hpa-E on the SV40 genome. *Virology* 68:260-265.
- (13) Sompayrac, L. and K.J. Danna (1977) Measurements of the genome sizes of simian virus 40 and polyoma virus. *J. Virol.* 24:695-700.
- (14) Danna, K.J. (1980) Determination of fragment order through partial digests and multiple enzyme digests. IN: *Methods in Enzymology, Vol. 65* (L. Grossman and K. Moldave, eds.), Academic Press, New York. pp. 449-467.
- (15) Danna, K.J. and F B. Haynes (1980) The genetics of simian virus 40. IN: *Viral Oncology* (G. Klein, ed.), Raven Press, New York. pp. 551-580.
- (16) Chikaraishi, D.M. and K.J. Danna (1981) Simian virus 40 transcriptional complexes incorporate mercurated nucleotides in RNA *in vitro*. *J. Virol.* 37:511-517.
- (17) Feist, P.L. and K.J. Danna (1981) Sulfhydrylcellulose: a new medium for chromatography of mercurated polynucleotides. *Biochemistry* 20:4243-4246.
- (18) Sompayrac, L.M. and K.J. Danna (1981) Efficient infection of monkey cells with DNA of simian virus 40. *Proc. Natl. Acad. Sci. USA* 78:7575-7578.
- (19) Sompayrac, L.M. and K.J. Danna (1982) Isolation and characterization of simian virus 40 early region deletion mutants. *J. Virol.* 43:328-331.
- (20) Danna, K.J. and L.M. Sompayrac (1982) Efficient infection of monkey cells with SV40 DNA. II. Use of low-molecular-weight DEAE-dextran for large-scale experiments. *J. Virol. Methods* 5:335-341.
- (21) Lycan, D.E. and K.J. Danna (1983) Characterization of the 5⁰ termini of purified nascent SV40 late transcripts. *J. Virol.* 45:264-274.
- (22) Sompayrac, L.M., E.G. Gurney and K.J. Danna (1983) Stabilization of the 53,000-dalton non-viral tumor antigen is not required for transformation by simian virus 40. *Mol. Cell Biol.* 3:290-296.
- (23) Sompayrac, L.M. and K.J. Danna (1983) Simian virus 40 deletion mutants that transform with reduced efficiency. *Mol. Cell Biol.* 3:484-489.
- (24) Sompayrac, L.M. and K.J. Danna (1983) Simian virus 40 sequences between 0.168 and 0.424 map units are not required for abortive transformation. *J. Virol.* 46:475-480.
- (25) Sompayrac, L.M. and K.J. Danna (1983) A simian virus 40 *d1884/tsA58* double mutant is temperature sensitive for abortive transformation. *J. Virol.* 46:620-625.
- (26) Chikaraishi, D.M., L. Buchanan, K.J. Danna and C.A. Harrington (1983) Genomic organization of rat rDNA. *Nucl. Acids Res.* 11:6437-6452.
- (27) Lycan, D.E. and K.J. Danna (1984) S1 mapping of purified nascent transcripts of simian virus 40. *Mol. Cell Biol.* 4:625-633.
- (28) Sompayrac, L. and K.J. Danna (1984) Less than 40% of the SV40 large T antigen coding sequence is required for transformation. *Mol. Cell Biol.* 4:1661-1663.

- (29) Pan, S., L.M. Sompayrac, B.B. Knowles and K.J. Danna (1985) A fragment of the SV40 early genome is capable of inducing tumors in nude mice. *J. Virol.* 53:988-989.
- (30) Sompayrac, L. and K.J. Danna (1985) The SV40 T-antigen gene can have two introns. *Virology* 142:432-436.
- (31) Sompayrac, L. and K.J. Danna (1985) The simian virus 40 sequences between 0.169 and 0.423 map units are not essential to immortalize early-passage rat embryo cells. *Mol. Cell Biol.* 5:1191-1194.
- (32) Howard, E.A., K.J. Danna, E.S. Dennis and W.J. Peacock (1985) Transient expression in maize protoplasts. *UCLA Symposium on Plant Genetics, Keystone, Colorado.*
- (33) Sompayrac, L. and K.J. Danna (1986) An SV40 mutant T antigen does not bind the SV40 viral origin. *Virology* 153:297-309.
- (34) Sompayrac, L. and K.J. Danna (1988) A new SV40 mutant that encodes a small fragment of T antigen transforms established rat and mouse cells. *Virology* 163:391-396.
- (35) Sompayrac, L.M. and K.J. Danna (1989) An SV40 mutant oncoprotein has a nuclear location. *Virology* 171:267-270.
- (36) Sompayrac, L. and K.J. Danna (1990) A method to identify the genomic targets of DNA binding proteins. *Proc. Natl. Acad. Sci. USA* 87:3274-3278.
- (37) Sompayrac, L. and K.J. Danna (1991) The amino-terminal 147 amino acids of SV40 large T antigen transform secondary rat embryo fibroblasts. *Virology* 181:413-415.
- (38) Danna, K.J. and R. Miranda (1991) Behavior of the MS2 mutation in interspecies cross between *Glycine max* and *Glycine soja*. *Soybean Gen. Newsl.* 18:298-300.
- (39) Sompayrac, L. and K.J. Danna (1994) An amino-terminal fragment of SV40 T antigen induces cellular DNA synthesis in quiescent rat cells. *Virology* 200:849-853.
- (40) Vahedian, M., L. Shi, T. Zhu, R. Okimoto, K. Danna and P. Keim (1995) Genomic organization and evolution of the soybean SB92 satellite sequence. *Plant Mol. Biol.* 29:857-862.
- (41) Sompayrac, L., S. Jane, T.C. Burn, D.G. Tenen and K.J. Danna (1995) Overcoming limitations of the mRNA differential display technique. *Nucl. Acids Res.* 22:4738-4739.
- (42) Danna, K.J., R. Workman, V. Coryell and P. Keim (1996) 5S rRNA genes in tribe Phaseoleae: Array size, number and dynamics. *Genome* 39:445-455.
- (43) Sompayrac, L., S. Jane and K.J. Danna (1996) Reduced levels of $\alpha 1(x1)$ procollagen mRNA in SV40-transformed cells. *Virology* 218:4r12-416.
- (44) Cheung, J., K.J. Danna, E.M. O'Conner, L.B. Price and R.F. Shand (1997) Isolation, sequence and expression of the gene encoding halocin H4, a bacteriocin from the *Haloferax mediterranei* R4. *J. Bacteriol.* 179:548-551.
- (45) Hennegan, K.P. and K.J. Danna (1998) pBIN20: An improved binary vector for *Agrobacterium* mediated transformation. *Plant Mol. Biol. Rept.* 16:129-131.
- (46) Ziegler, M.T., S.R. Thomas, and K.J. Danna (2000) Accumulation of a thermostable Endo-1,4- β -D-glucanase in the apoplast of *Arabidopsis thaliana*. *Mol. Breeding* 6:37-46.

- (47) Danna, K. J. (2001) Production of cellulases in plants for biomass conversion. In: Romeo, J.T., J.A. Saunders, & B.F. Matthews (ed) *Recent Advances in Phytochemistry, Vol. 35. Regulation of Phytochemicals by Molecular Techniques*, pp. 205-231. Elsevier, Oxford, UK

ABSTRACTS AND EDUCATIONAL PUBLICATIONS

- (1) Sompayrac, L. and K. Danna (1981) The region of the SV40 genome between 0.17 and 0.43 map units is not essential for the maintenance of transformation. The Imperial Cancer Research Fund 1981 Tumour Virus Meeting on SV40, Polyoma, and Adenovirus, p. 15.
- (2) Danna, K. and L. Sompayrac (1981) Efficient infection of mammalian cells with SV40 DNA. The Imperial Cancer Research Fund 1981 Tumour Virus Meeting on SV40, Polyoma, and Adenovirus, p. 195.
- (3) Lycan, D. and K.J. Danna (1982) Characterization of the 5' termini of purified nascent SV40 late transcripts. Cold Spring Harbor 1982 Tumor Virus Meeting on SV40, Polyoma, and Adenovirus, p. 109.
- (4) Dubin, M., P.A. Clapshaw, K. Danna and K. Bever (1982) MCD Biology 105-106 Laboratory Manual.
- (5) Howard, E.A., K.J. Danna, E.S. Dennis and W.J. Peacock (1985) Transient expression studies using maize protoplasts. Genome Conference, Lorne, Australia.
- (6) Cheung, J., K.J. Danna and R.F. Shand (1996) Expression and characterization of the *ha/H4* gene: a halocin encoding gene from the Haloarchaeon *Haloferax mediterranei* R4. Annual Meeting of American Society for Microbiology, New Orleans. Talk presented by R.F. Shand.
- (7) Danna, K.J., J. Oliver, J. Gomez, M. Shirk and M. Ziegler (1996) Feasibility of overexpressing cellulases in plant cells for ethanol fuel production. Ninth Annual Colorado Biotechnology Symposium, Colorado State University, Fort Collins, CO. Poster presented by K.J. Danna and J. Oliver.
- (8) Ziegler, M.T. and K.J. Danna (1998) Accumulation of *Acidothermus cellulolyticus* E1 endoglucanase in the apoplast of plants. Second Annual Rocky Mountain Plant Biotechnology and Molecular Biology Symposium, Colorado State University, Fort Collins, CO. Poster presentation.
- (9) Hennegan, K.P. and K.J. Danna (1998) pBIN20: An improved binary vector for *Agrobacterium*-mediated transformation. Second Annual Rocky Mountain Plant Biotechnology and Molecular Biology Symposium, Colorado State University, Fort Collins, CO. Poster presentation.
- (10) Oliver, J., M. Shirk, and K.J. Danna (1998) Targeting of Microbial Cellulases to Intracellular Compartments: Applications to Biomass Conversion. Second Annual Rocky Mountain Plant Biotechnology and Molecular Biology Symposium, Colorado State University, Fort Collins, CO. Poster presentation.
- (11) Danna, K.J., M. Ziegler, J.C. Oliver, M. Shirk, K. Hennegan, and E. Jensen (1998) Production of cellulases in plants for biomass conversion. Twentieth Symposium on Biotechnology for Fuels and Chemicals, Gatlinburg, TN. Poster presentation.
- (12) Danna, K. (1999) Production of thermostable enzymes in plants for biomass conversion. Proceedings and Abstracts, Third Annual Rocky Mountain Plant Biotechnology and Molecular Biology Symposium, Fort Collins, CO. Talk.

IN PREPARATION

Shoureshi, P., B. Maxwell, and K. J. Danna (for Plant Biotechnol. J.) A Rapid Leaf-Punch Assay to Screen for Endoglucanase Activity in Transgenic Plants

Maxwell, B. and K.J. Danna. Accumulation of E1-cat, a Thermostable Endoglucanase, in the Endoplasmic Reticulum, Apoplast, and Vacuoles of Tobacco BY-2 Cells