

**BIOGRAPHICAL SKETCH**

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NAME	POSITION TITLE
Michael R. Lieber	Professor, Pathology, Biochemistry & Molecular Biology, Molecular Microbiology & Immunology & Biological Sci.

  

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Missouri, Columbia, MO	B.A., B.S.	1977	Biochemistry/Biology
University of Chicago, Chicago, IL	Ph.D.	1981	Biochemistry
University of Chicago, Chicago, IL	M.D.	1983	Medicine
National Institutes of Health, Bethesda, MD	Resident	1986	Pathology
National Institutes of Health, Bethesda, MD	Postdoc.	1989	Biochemistry

**A. Positions and Honors****Positions and Employment**

1989-1994	Assistant Professor, Department of Pathology, Stanford University, Stanford, CA
1989-1994	Director, Tumor Biology Postdoctoral Training Program, Stanford University, Stanford, CA
1994	Associate Professor with tenure, Department of Pathology, Stanford University, Stanford, CA
1994-1997	Associate Professor with tenure, Department of Pathology, Washington University School of Medicine, St. Louis, MO. Secondary in the Department of Biochemistry and Molecular Biophysics
1997-Present	Professor, Department of Pathology, Keck School of Medicine USC, Los Angeles, CA. Jointly in Departments of Biochemistry and Molecular Biology, Molecular Microbiology and Immunology, and Biological Sciences
1997-Present	Director, Program in Molecular Oncology Training Program; Program Leader in Cancer Ctr.

**Honors**

1983	Lampert Research Award, Best Dissertation, Biomedical Research, University of Chicago
1988-1994	Lucille P. Markey Scholar of the Markey Charitable Trust
1990	Cancer Research Institute Award (National)
1994	American Cancer Society Faculty Research Award
1994-1999	Leukemia Society of America Faculty Scholar Award
1995	American Society for Clinical Investigation
1998	Warner-Lambert/Parke-Davis Award, FASEB Am. Soc. Investigative Pathology
1999	Leukemia Society Stohlman Scholar
2001	Rita and Edward Polusky Professorship, USC Norris Comprehensive Cancer Center

**B. Selected Peer-reviewed Publications** (from a total of 110 publications)

- Gerstein RM, **Lieber MR**. Extent to which homology can constrain coding exon junctional diversity in V(D)J recombination. *Nature* 363:625-627, 1993.
- Gerstein RM, **Lieber MR**. Coding end sequence can markedly affect the initiation of V(D)J recombination. *Genes Dev* 7:1459-1469, 1993.
- Harrington JJ, **Lieber MR**. The characterization of a mammalian DNA structure-specific endonuclease. *EMBO J* 13:1235-1246, 1994.
- Harrington JJ, **Lieber MR**. Functional domains within FEN-1 and RAD2 define a family of structure-specific endonucleases: implications for nucleotide excision repair. *Genes Dev* 8:1344-1355, 1994.
- Harrington JJ, **Lieber MR**. DNA structural elements required for FEN-1 binding. *J Biol Chem* 270:4503-4508, 1995.
- Daniels GA, **Lieber MR**. Strand specificity in the transcriptional targeting of recombination at immunoglobulin switch sequences. *Proc Natl Acad Sci USA* 92:5625-5629, 1995.
- Daniels GA, **Lieber MR**. RNA:DNA complex formation upon transcription of immunoglobulin switch regions: implications for the mechanism and regulation of class switch recombination. *Nucleic Acids Res* 23:5006-5011, 1995. Gauss GH, **Lieber MR**. Mechanistic constraints on diversity in V(D)J recombination. *Mol Cell Biol* 16:258-269, 1996.
- Wu X, Li J, Li X, Hsieh CL, Burgers PM, **Lieber MR**. Processing of branched DNA intermediates by a complex of human FEN-1 and PCNA. *Nucleic Acids Res* 24:2036-2043, 1996.

- Li J, Daniels GA, **Lieber MR**. Asymmetric mutation around the recombination break point of immunoglobulin class switch sequences on extrachromosomal substrates. *Nucleic Acids Res* 24:2104-2111, 1996.
- Wu X, **Lieber MR**. Protein-protein and protein-DNA interaction regions within the DNA end-binding protein Ku70-Ku86. *Mol Cell Biol* 16:5186-5193, 1996.
- Schwarz K, Gauss GH, Ludwig L, Pannicke U, Li Z, Lindner D, Friedrich W, Seger RA, Hansen-Hagge TE, Desiderio S, **Lieber MR**, Bartram CR. RAG mutations in human B cell-negative SCID. *Science* 274:97-99, 1996.
- Grawunder U, **Lieber MR**. A complex of RAG-1 and RAG-2 proteins persists on DNA after single-strand cleavage at V(D)J recombination signal sequences. *Nucleic Acids Res* 25:1375-1382, 1997.
- Yaneva M, Kowaleski T, **Lieber MR**. Interaction of DNA-dependent protein kinase with DNA and with Ku: biochemical and atomic-force microscopy studies. *EMBO J* 16:5098-5112, 1997.
- Grawunder U, Wilm M, Wu X, Kulesza P, Wilson TE, Mann M, **Lieber MR**. Activity of DNA ligase IV stimulated by complex formation with XRCC4 protein in mammalian cells. *Nature* 388:492-495, 1997.
- Wilson TE, Grawunder U, **Lieber MR**. Yeast DNA ligase IV mediates non-homologous DNA end joining. *Nature* 388:495-498, 1997.
- Gauss G, Domain I, Hsieh CL, **Lieber MR**. V(D)J recombination activity in human hematopoietic cells: correlation with developmental stage and genome stability. *Eur J Immunol* 28:351-358, 1998.
- Grawunder U, Zimmer D, **Lieber MR**. DNA ligase IV binds to XRCC4 via a motif located between rather than within its BRCT domains. *Curr Biol* 8:873-876, 1998.
- West RB, Yaneva M, **Lieber MR**. Productive and nonproductive complexes of Ku and DNA-dependent protein kinase at DNA termini. *Mol Cell Biol* 18:5908-5920, 1998.
- Grawunder U, Zimmer D, Kulesza P, **Lieber MR**. Requirement for an interaction of XRCC4 with DNA ligase IV for wild-type V(D)J recombination and DNA double-strand break repair *in vivo*. *J Biol Chem* 273:24708-24714, 1998.
- West RB, **Lieber MR**. The RAG-HMG1 complex enforces the 12/23 rule of V(D)J recombination specifically at the double-hairpin formation step. *Mol Cell Biol* 18:6408-6415, 1998.
- Grawunder U, Zimmer D, Fugmann S, Schwarz K, **Lieber MR**. DNA ligase IV is essential for V(D)J recombination and DNA double-strand break repair in human precursor lymphocytes. *Mol Cell* 2:477-484, 1998.
- Wu X, Wilson TE, **Lieber MR**. A role for FEN-1 in nonhomologous DNA end joining: the order of strand annealing and nucleolytic processing events. *Proc Natl Acad Sci USA* 96:1303-1308, 1999.
- Wilson TE, **Lieber MR**. Efficient processing of DNA ends during yeast nonhomologous end joining. Evidence for a DNA polymerase beta (Pol4)-dependent pathway. *J Biol Chem* 274:23599-23609, 1999.
- Yu K, **Lieber MR**. Mechanistic basis for coding end sequence effects in the initiation of V(D)J recombination. *Mol Cell Biol* 19:8094-8102, 1999.
- Karanjawala ZE, Grawunder U, Hsieh CL, **Lieber MR**. The nonhomologous DNA end joining pathway is important for chromosome stability in primary fibroblasts. *Curr Biol* 9:1501-1504, 1999.
- Yu K, **Lieber MR**. The nicking step in V(D)J recombination is independent of synapsis: implications for the immune repertoire. *Mol Cell Biol* 20:7914-7921, 2000.
- Raghavan SC, Kirsch IR, **Lieber MR**. Analysis of the V(D)J recombination efficiency at lymphoid chromosomal translocation breakpoints. *J Biol Chem* 276:29126-29133, 2001.
- Ma Y, **Lieber MR**. DNA length-dependent cooperative interactions in the binding of Ku to DNA. *Biochemistry* 40:9638-9646, 2001.
- Yu K, Taghva A, **Lieber MR**. The cleavage efficiency of the human immunoglobulin heavy chain VH elements by the RAG complex: implications for the immune repertoire. *J Biol Chem* 277:5040-5046, 2002.
- Ma Y, **Lieber MR**. Binding of inositol hexakisphosphate (IP6) to Ku but not to DNA-PKcs. *J Biol Chem* 277:10756-10759, 2002.
- Karanjawala ZE, Murphy N, Hinton DR, Hsieh CL, **Lieber MR**. Oxygen metabolism causes chromosome breaks and is associated with the neuronal apoptosis observed in DNA double-strand break repair mutants. *Curr Biol* 12:397-402, 2002.
- Ma Y, Pannicke U, Schwarz K, **Lieber MR**. Hairpin opening and overhang processing by an Artemis/DNA-dependent protein kinase complex in nonhomologous end joining and V(D)J recombination. *Cell* 108:781-794, 2002.
- Adachi, N., and **Lieber, M.R.** Bidirectional Gene Organization: A Common Architectural Motif in the Human Genome. *Cell* 109: 807-809, 2002.
- Karanjawala, Z.E., N. Adachi, R. Irvine, E. K. Ou, D. Shibata, K. Schwarz, C.-L. Hsieh, and **M. R. Lieber** (2002). The Embryonic Lethality in DNA ligase IV-deficient mice is rescued by deletion of Ku: implications for unifying the heterogeneous phenotypes of NHEJ mutants. *DNA Repair* 1: 1017-1026.
- Karanjawala, Z.E., C.L. Hsieh, and **M.R. Lieber** (2003). Overexpression of Cu/Zn Superoxide Dismutase is Lethal for Mice Lacking Double-Strand Break Repair. *DNA Repair* 2: 285-274.
- Yu, K., F. Chedin, C.-L. Hsieh, T.E. Wilson, and **M.R. Lieber**. (2003). R-loops at immunoglobulin class switch regions in the chromosomes of stimulated B cells. *Nature Immunology* 4: 442-451.