

# Charles R. Cantor

## Curriculum Vitae

**Born:** August 26, 1942; Brooklyn, New York

### Education

1963 A.B., Columbia University, *Summa Cum Laude*  
1966 Ph.D., University of California, Berkeley  
Eastman Kodak Award  
Research Sponsor: Prof. I. Tinoco, Jr.

### Employment

1966-1969 Assistant Professor of Chemistry, Columbia University  
1969-1972 Associate Professor of Chemistry, joint appointment in  
Biological Sciences, Columbia University  
1972-1981 Professor of Chemistry, joint appointment in Biological Sciences,  
Columbia University  
1981-1989 Professor and Chairman of Genetics and Development,  
College of Physicians and Surgeons, Columbia University; and  
Deputy Director for Education, 1981-85, Comprehensive Cancer Center;  
Deputy Director for Biotechnology, 1985-88, Comprehensive Cancer  
Center  
1988-1989 Higgins Professor of Genetics and Development, Faculty of Medicine,  
Columbia University  
1988-1990 Director, Human Genome Center, Lawrence Berkeley Laboratory  
1989-1991 Senior Biochemist, Cell and Molecular Biology Division, Lawrence  
Berkeley Laboratory  
1989-1992 Professor of Molecular Biology, University of California, Berkeley  
1990-1992 Principal Scientist, Human Genome Project, U.S. Department of Energy  
1991-1992 Senior Biochemist, Chemical Biodynamics Division, Lawrence Berkeley  
Laboratory  
1992-present Professor of Biomedical Engineering and Biophysics, Boston University  
1992-present Director, Center for Advanced Biotechnology, Boston University  
1994-present Professor, Pharmacology Department, Boston University Medical School  
1995-1998 Chair, Department of Biomedical Engineering, Boston University  
1998-present Chief Scientific Officer, Sequenom, Inc. and Member, Board of Directors  
2001-present Adjunct Professor, Department of Bioengineering, UCSD

### Awards and Honors

1969-1971 Fellow of the Alfred P. Sloan Foundation  
1972 Fresenius Award in Chemistry  
1973-1974 Guggenheim Fellow  
1975-1976 Fairchild Distinguished Visiting Scholar, California Institute of Technology  
1978 Eli Lilly Award in Biological Chemistry  
1981 Fellow of the American Association for the Advancement of Science

1985	Outstanding Investigator Grant, National Cancer Institute
1988	Biochemical Analysis Prize of the German Society of Clinical Chemistry
1988	Member of the National Academy of Sciences
1988	Member of the American Academy of Arts and Sciences
1989	ISCO Award for Advances in Biochemical Instrumentation
1990	Herbert A. Sober Award, American Society for Biochemistry and Molecular Biology
1990	Honorary Member, Japanese Biochemical Society
1992	Fellow of the California Academy of Sciences
2000	Fellow of the Biophysical Society
2000	Emily M. Gray Award, Biophysical Society
2002	Chief Scientist of the Year, T Sector and BIOCOM
2004	The Ohio State University Human Cancer Genetics Program Commemorative Medal for Excellence in Research and Clinical Care
2005, 2006	Fellow of the American Institute for Medical and Biological Engineering

### **Special Lectureships**

1985	Distinguished Lecturer, University of Tennessee
1985	Distinguished Lecturer, University of Cincinnati
1985	Jesse Beams Lecturer, University of Virginia
1986	Barton Lecturer, University of Oklahoma
1986	Peter Debye Lecturer, Cornell University
1986	Stephanie Lynn Kossoff Memorial Lecturer, Columbia University
1987	Reilly Lecturer, Notre Dame University
1987	Allied Corporation Lecturer, Waksman Institute
1987	Visiting Scholar, Japan Society for the Promotion of Science
1988	Veatch Lecturer, Harvard Medical School
1988	Sol Spiegelman Lecturer, University of Illinois
1989	Steinberg/Wylie Lecturer, University of Maryland
1989	Biochemical Society Lecturer, British Association for the Advancement of Science
1989	Ronald R. Fisher Lecturer, University of South Carolina
1990	Boyce Thompson Distinguished Lecturer, Cornell University
1990	Distinguished Lecturer, Oak Ridge National Laboratory
1991	Hanna Memorial Lecturer, Case Western Reserve University
1991	Distinguished Speaker in Biochemistry and Molecular Biology, University of Wisconsin, Milwaukee
1992	Baker Lecturer, Cornell University
1992	Special Chair Professor, National Science Council, Republic of China
1994	Barnett Lecture in Bioanalytical Chemistry, Northeastern University
1996	Douglas G. Hill Memorial Lecturer, Duke University
1997	University Lecturer, Boston University
1998	Distinguished Lecturer, George Mason University
1998	George Burch Memorial Lecture, Association of University Cardiologists
2001	Plenary Lecture, Biophysical Society of Taiwan Seventh Annual Symposium on Recent Advances in Biophysics
2002	Harvard University Morrison Lecture
2004	McElvan Lecturer, University of Wisconsin, Madison on Analytical Chemistry
2005	Rachford Lecturer, Children's Hospital of Cincinnati

## Professional Affiliations and Service

1971-1975	NIH Study Section, BBCA
1972-1986	Editorial Board, <i>Archives of Biochemistry and Biophysics</i>
1972-1981	Editorial Board, <i>Journal of Molecular Evolution</i>
1972-1992	Editorial Board, <i>Journal of Molecular Biology</i>
1973-1986	Editorial Advisory Board, <i>Biopolymers</i> ; Editorial Board, 1980-83
1973-1988	Editorial Board, <i>Nucleic Acids Research</i>
1974	Co-chairman, Biopolymers Gordon Conference
1974-1992	Harvey Society
1976-1988	Proposal Review Panel, Stanford Synchrotron Radiation Laboratory; Chairman, 1980-88
1976-present	Series Editor, <i>Advanced Textbooks in Chemistry</i> , Springer-Verlag, New York
1977-1981	CMBD Review Committee, NIGMS, NIH; Chairman, 1979-81
1978-1983	Editorial Board, <i>Biochemistry</i>
1978-1983	Board of Trustees, Cold Spring Harbor Laboratory
1978-present	Biophysical Society; Council Member, 1978-81
1979-1981	Nominating Committee, American Chemical Society, Division of Biological Chemistry
1980-1994	Society for Analytical Cytology
1981-1986	Editorial Board, <i>Journal of Biological Chemistry</i>
1982-present	American Society of Biochemistry and Molecular Biology, formerly American Society of Biological Chemists; Nominating Committee, 1982-83
1982-1994	Associate Editor, <i>Annual Review of Biophysics and Biophysical Chemistry</i>
1983-1984	National Research Council Committee on Causes and Effects of Changes in Stratospheric Ozone
1983-1987	Consultant, Syntex Medical Diagnostics
1983-1987	Associate Editor, <i>Journal of Molecular Evolution</i>
1984-1985	Consultant, Lifecodes, Inc., formerly Actagen, Inc.
1984-1988	Editorial Board, <i>Accounts of Chemical Research</i>
1984-1988	Consultant, LKB-Produkter AB
1984-1989	Principal Investigator, Columbia University, Member of MacArthur Foundation Consortium on the Biology of Parasitic Diseases
1984-1995	Advisory Council, Department of Molecular Biology, Princeton University
1984-1986	Scientific Advisory Board, American Cyanamid Company, Wayne, NJ
1984-present	International Union of Biochemistry and Molecular Biology, formerly Nomenclature Commission of the International Union of Biochemistry
1985-1986	Office of Technology Assessment Advisory Panel on Determining Mutation Frequencies in Human Beings
1985-1986	Consultant, Molecular Biophysics Technology, Inc.
1985-1989	National Research Council Committee on Research Opportunities in Biology
1985-1991	Board of Reviewing Editors, <i>Science</i>
1985-present	Consultant, Genelabs, Inc., Redwood City, CA
1985-1994	U.S. National Committee of International Union of Pure and Applied Biophysics; Vice Chairman, 1988-1990; Chairman, 1991-1994
1986	Chairman, Committee for External Review, Department of Genetics, Stanford University
1986-1987	Department of Energy HERAC Subcommittee on the Human Genome
1986-1988	National Research Council Committee on the Human Genome
1986-1989	Council, National Institute of General Medical Sciences, NIH

1986-1989 Visiting Committee for Brookhaven National Laboratory Biology Department  
 1987-1989 Scientific Advisory Board, Hereditary Disease Foundation  
 1987-1994 Subject Area Editor, *Genomics*  
 1987-1994 Advisory Committee, Searle Scholars Program; Chairman, 1993-1994  
 1987-2000 Scientific and Technical Advisory Board, Prince Ventures Partner, III  
 1988-1991 Co-organizer, Three Cold Spring Harbor Laboratory Meetings on Genome Mapping and Sequencing  
 1988-1996 Scientific Advisory Council, Roswell Park Memorial Institute  
 1988-present Biomedical Advisory Committee, Pittsburgh Supercomputing Center  
 1988-present Cell and Membrane Transport Commission, International Union of Pure and Applied Biophysics  
 1988-1992 Chairman, Department of Energy Human Genome Coordinating Committee; member, 1991-1994  
 1988-present Member, Executive Committee and Founding Council, International Human Genome Organization [HUGO]; Vice President, 1990-present; Chairman, 1991-1995; Chair, HUGO Human Genome Mapping Committee [HGMC]; President, HUGO Americas, 1992-1997  
 1988-present Editorial Board, *Current Opinion in Biotechnology*  
 1988-1998 Consultant, Amersham-Pharmacia Biotechnology, formerly Pharmacia LKB Biotechnology AB  
 1989-1990 Member, NAS/NRC Panel on Cooperation with the USSR on Structure of the Eucaryotic Genome and Regulation of its Expression  
 1989-1991 Member, Executive Committee, Human Gene Mapping Workshops  
 1989-present American Society of Human Genetics  
 1989-1992 Co-chair, Human Genome I, II, III meetings  
 1989-1994 Scientific Advisory Committee, European Molecular Biology Laboratory  
 1989-present Advisory Committee, University of Pittsburgh Biotechnology Center  
 1990-1993 Advisory Committee, MacArthur Foundation Program in Parasite Biology  
 1990-1995 Member, Board of Scientific Counselors, National Center for Biotechnology Information [NCBI], National Library of Medicine  
 1990-1998 Member, UNESCO Scientific Coordinating Committee on the Human Genome Project  
 1991-1993 Member, Scientific Advisory Board, Ribogene, Inc.  
 1991-present Member, Advisory Board, Encyclopedia of Molecular Biology and Biotechnology  
 1992-1997 Member, Board of Directors, Chair, Scientific Advisory Board, ATGC/AT Biochem, Inc.  
 1992-2002 Member, Scientific Advisory Board, Aclara, Inc., formerly Soane Technologies, Inc., Hayward, CA  
 1992-1994 Organizer, 1st through 3rd International Conference on Bioinformatics, Supercomputing, and Complex Genome Analysis, Tallahassee, FL  
 1993-2000 Member, Board of Scientific Advisors, Mosaic Technologies, Inc., Boston, MA  
 1993-1998 Member, Plant Genome Science and Technology Coordinating Committee, Department of Agriculture  
 1993-1994 Chair, European Bioinformatics Institute [EBI] Advisory Committee  
 1993-1998 Member, Scientific Advisory Committee, Incyte Pharmaceuticals, Inc., Palo Alto, CA  
 1994-present Member, Advisory Board, Boston University *Journal of Science Technology and Law*  
 1994-1998 Consultant, SEQUENOM, Inc., San Diego, CA  
 1994-present Co-chair, Biotechnology Advisory Committee, Fisher Scientific, Hampton, NH  
 1994-1998 Member, HERAC Genome Project Subcommittee  
 1995-1998 Consultant, Trichor, Boston, MA

1996-1997 Member, NRC Committee, "Bits of Power"

1996-2000 Consultant, AmberGen, Boston, MA

1996-2002 Member, Advisory Committee, ELBA Foundation, Italy

1997-2000 Member, DARPA Advisory Committee on Biological Warfare Defense

1997-1998 Treasurer, New England Complex Systems Institute

1996-2000 FASEB Consensus Committee on Federal Funding, representing the Biophysical Society; Chair, DOE Subcommittee

1997-present Advisor, Techno Ventures Management, Munich

1996-present Consultant, Caliper, Inc., Palo Alto, CA

1997-2000 Member, The Protein Society

1997-1999 Quest Scholar, Quest Diagnostics, Inc., San Juan Capistrano, CA

1998-present Member, Defense Intelligence Agency Bio 2020 Red Team, Washington, D.C.

1999-present Science Board, GENpathways, formerly CISTem, San Diego, CA

2000-present Consultant, Samsung SAIT, Korea

2000-present Board of Directors, Human BioMolecular Research Institute, San Diego, CA

2000-2001 Editorial Advisory Board, Oxford University Press

2001-present Editorial Board, *Proceedings of the National Academy of Sciences*

2001-present Editorial Board, *American Journal of Pharmacogenomics*

2001-present Editorial Advisory Board, *Genomics and Proteomics*

2001-present Member, Lawrence Livermore National Laboratories BBRP Board

2001-present Dean's Advisory Board, Division of Biology, University of California San Diego

2001-present Industrial Advisory Board, Department of Chemistry and Biochemistry, University of California San Diego

2001-present Member, Board of Overseers, Brandeis University School of Science

2001-present Scientific Advisor, Automated Cell, Pittsburgh, PA

2001-present Scientific Advisory Board, Cellicon, Boston, MA

2001-2003 Scientific Advisory Board, GeneFormatics, Inc., San Diego, CA

2001-present Scientific Advisory Board, Odyssey, Inc., San Ramon, CA

2001-present Board of Directors, EXSAR, formerly know as Carta Proteomics, Monmouth Junction, NJ

2002-present Editorial Team, *Drug Discovery Today*

2002-2004 Board of Directors, SIGA Technologies, Inc., San Diego, CA

2002-present Board of Directors, Plexus Vaccine, San Diego, CA

2002-present Advisory Committee Member, Stockholm Strategic Research Foundation

2002-present Board of Directors, Molecular Sciences Institute, Berkeley, CA

2002-present Scientific Advisory Board, Rodi Pharmaceuticals, Del Mar, CA

2002-present Scientific Advisory Board, Buffalo Center of Excellence in Bioinformatics

2002-present Founder and Member, Board of Directors, 2002-03, SelectX Pharmaceuticals, Inc., Worcester, MA

2003-present Scientific Advisory Board, Strand Genomics, Bangalore, India

2003-present Member, Editorial Academy, *International Journal of Oncology*, Athens, Greece

2003-present Member, National Advisory Board, Boston University Research Center for Translational Genomics and Human Rights, Boston, MA

2004-present Scientific Advisory Board, GeneGo, St. Joseph, MI

2004-present Scientific Advisory Board, Modular Genetics, Woburn, MA

2004-present Scientific Advisory Board, NuAce Technologies, Ramat-Hasharon Israel

2004-present Scientific Advisory Board, Provid Research, Piscataway, NJ

2004-present Scientific Advisory Board, StructureSpec, La Jolla, CA

2004-present Scientific Advisory Board, Joint Center for Structural Genomics (JCSG), La Jolla, CA

2004-present            Scientific Advisory Board, UppsalaBio-X, Uppsala, Sweden  
2005-present            Member, Board of Directors, Silicon Kinetics, San Diego, CA  
2005-2006                Member, The National Academies Committee on Review of Department of  
Energy's Genomics: GTL Program, Washington, DC

## Publications

- Over 450 Journal Articles
- Cantor, C. R., and Schimmel, P. R. *Biophysical Chemistry*. San Francisco: W.H. Freeman and Company, 1980. 3 Volumes.
- Cantor, C.R., and Smith C.L. *Genomics: The Science and Technology of the Human Genome Project*, Wiley, Interscience, 1999.

## Patents

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, Norway Euro Patent No. NO 0172156 C, granted 05/24/84

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, Japanese Patent No. JP 3052907 B4, granted 05/24/84

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, US Patent No. US 4,473,452, granted 09/25/84

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, Canadian Patent No. CA 1,207,275, granted 07/08/86

Cantor, C.R., Axel, R., and Argarana, C.: *DNA Encoding Streptavidin, Streptavidin Produced Therefrom, Fused Polypeptides which Include Amino Acid Sequences Present in Streptavidin and Uses Thereof*, European Patent No. EP 0258411, granted 08/27/87

Cantor, C.R., Axel, R., and Argarana, C.: *DNA Encoding Streptavidin, Streptavidin Produced Therefrom, Fused Polypeptides which Include Amino Acid Sequences Present in Streptavidin and Uses Thereof*, Japanese Patent No. JP 63502560, granted 08/27/87

Cantor, C.R., Axel, R., and Argarana, C.: *DNA Encoding Streptavidin, Streptavidin Produced Therefrom, Fused Polypeptides which Include Amino Acid Sequences Present in Streptavidin and Uses Thereof*, Australian Patent No. AU 7165287, granted 08/27/87

Saffran, W.A., Edelson, R.L., Gasparro, F.P., Welsh, J., and Cantor, C.R.: *Biotinylated Psoralens*, European Patent No. EP 0266212, granted 10/08/87

Saffran, W.A., Edelson, R.L., Gasparro, F.P., Welsh, J., and Cantor, C.R.: *Biotinylated Psoralens*, Australia Patent No. AU 7237287 A1, granted 10/08/87

Cantor, C.R. and Schwartz, D.C.: *Gel Inserts Useful in Electrophoresis*, US Patent No. US 4,695,548, granted 09/22/87

Collins, F., Weissman, S., and Cantor, C.R.: *Coincidence Cloning Method and Library*, Australia Patent No. AU 2318288 A1, granted 02/23/89

Cantor, C.R., Axel, R., and Argarana, C.: *DNA Encoding Streptavidin, Streptavidin Produced Therefrom, Fused Polypeptides which Include Amino Acid Sequences Present in Streptavidin and Uses Thereof*, US Patent No. US 4,839,293, granted 06/13/89

Cantor, C.R. and Schwartz, D.C.: *Electrophoretic Methods Employing Gel Inserts*, US Patent No. US 4,861,448, granted 08/29/89

Saffran, W.A., Edelson, R.L., Gasparro, F.P., Welsh, J.T., and Cantor, C.R.: *Biotinylated Psoralens*, US Patent No. US 4,868,311, granted 09/19/89

Van der Ploeg, L.H.T., Giannini, S.H., and Cantor, C.R.: *Method for Detecting Animal-Infective Protozoa in vitro and a Method for Detecting Agents which Block the Differentiation Thereof*, US Patent No. US 4,908,308, granted 03/13/90

Cantor, C.R., Köster, H., Smith, C.L., and Fu, D.J.: *Solid Phase Sequencing of Biopolymers*, European Patent No. EP 0830460, granted 11/06/92

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, European Patent No. EP 0125310, granted 02/10/93

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, Austria Euro Patent No. AT 0040752E, granted 02/10/93

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, Australia Patent No. AU 565758, granted 02/10/93

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, German Euro Patent No. DE 3379177 C0, granted 02/10/93

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, Denmark Euro Patent No. DK 0169978 B1, granted 02/10/93

Cantor, C.R. and Schwartz, D.C.: *Electrophoresis Using Alternating Transverse Electric Fields*, Finland Euro Patent No. FI 0084518C, granted 02/10/93

Cantor, C.R., Chuck, R.S., and Tse, D.B.: *Design and Synthesis of Bispecific DNA-antibody Conjugates*, US Patent No. US 5,635,602, granted 08/13/93

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, US Patent No. US 5,306,619, granted 04/26/94

Edwards, C.A., Cantor, C.R., Andrew, B.M., Turin, L.M., and Fry, K.E.: *Sequence-Directed DNA-Binding Molecules Compositions and Methods*, European Patent No. EP 0684999, granted 07/07/94

Edwards, C.A., Cantor, C.R., Andrews, B.M., Turin, L.M., and Fry, K.E.: *Sequence-Directed DNA-Binding Molecules Compositions and Methods*, Canadian Patent No. CA 2,152,501 A1, granted 07/07/94

Edwards, C.A., Cantor, C.R., Andrews, B.M., Turin, L.M., and Fry, K.E.: *Sequence-Directed DNA-Binding Molecules Compositions and Methods*, Australian Patent No. AU 685085, granted 07/07/94

Sano, T. and Cantor, C.R.: *Recombinant Streptavidin-Protein Chimeras Useful for Conjugation of Molecules in the Immune System*, US Patent No. US 5,328,985, granted 07/12/94

Cantor, C.R., Niemeyer, C.M., Smith, C.L., Sano, T., Hnatowich, D.J., and Rusckowski, M.: *Self-Assembling Multimeric Nucleic Acid Constructs*, European Patent No. EP 0744894, granted 08/03/95

Cantor, C.R., Niemeyer, C.M., Smith, C.L., Sano, T., Hnatowich, D.J., and Rusckowski, M.: *Self-Assembling Multimeric Nucleic Acid Constructs*, Japanese Patent No. JP 9511641, granted 08/03/95

Cantor, C.R., Niemeyer, C.M., Smith, C.L., Sano, T., Hnatowich, D.J., and Rusckowski, M.: *Self-Assembling Multimeric Nucleic Acid Constructs*, Australia Patent No. AU 1730595 A1, granted 08/03/95

Cantor, C.R., Ito, T., and Smith, C.L.: *DNA Purification by Triplex-Affinity Capture and Affinity Capture Electrophoresis*, US Patent No. US 5,482,836, granted 01/09/96

Cantor, C.R.: *Positional Sequencing by Hybridization*, US Patent No. US 5,503,980, granted 04/02/96

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, Canadian Patent No. CA 2,112,130, granted 08/06/96

Cantor, C.R., Niemeyer, C.M., Smith, C.L., Sano, T., Hnatowich, D.J., and Rusckowski, M.: *Self-Assembling Multimeric Nucleic Acid Constructs*, US Patent No. US 5,561,043, granted 10/01/96

Szafranski, P., Mello, C.M., Sano, T., Marx, K.A., Cantor, C.R., Kaplan, D.L., and Smith, C.L.: *Biotin-Binding Containment Systems*, Australia Patent No. AU 5443896 A1, granted 11/07/96

Cantor, C.R., Köster, H., Smith, C.L., and Fu, D.J.: *Solid Phase Sequencing of Biopolymers*, European Patent No. EP 0830469 A1, granted 11/17/96

Cantor, C.R., Köster, H., Smith, C.L., and Fu, D.J.: *Solid Phase Sequencing of Biopolymers*, Canadian Patent No. CA 2218188, granted 11/17/96

Cantor, C.R., Köster, H., Smith, C.L., and Fu, D.J.: *Solid Phase Sequencing of Biopolymers*, Japanese Patent No. JP 11503611T, granted 11/17/96

Smith, C. L., Yaar, R., Szafranski, P., and Cantor, C. R.: *Nucleic Acid Detection Methods*, Australia Patent No. AU 6248696 A1, granted 11/21/96

Smith, C. L., Yaar, R., Szafranski, P., and Cantor, C. R.: *Nucleic Acid Detection Methods*, Canadian Patent No. CA 2,221,467 A1, granted 11/21/96

Edwards, C.A., Cantor, C.R., Andrews, B.M., Turin, L.M., and Fry, K.E.: *Sequence-Directed DNA-Binding Molecules Compositions and Methods*, US Patent No. US 5,578,444, granted 11/26/96

Sano, T., Cantor, C.R., Vajda, S., Reznik, G.O., Smith, C.L., and Pandori, M.W.: *Streptavidin Mutants*, Australia Patent No. AU 5917796, granted 03/27/97

Sano, T., Cantor, C.R., Vajda, S., Reznik, G.O., Smith, C.L., and Pandori, M.W.: *Streptavidin Mutants*, European Patent No. EP 0856055 A1, granted 03/27/97

Sano, T., Cantor, C.R., Vajda, S., Reznik, G.O., Smith, C.L., and Pandori, M.W.: *Streptavidin Mutants*, Canadian Patent No. CA 2,222,035 A1, granted 03/27/97

Smith, C.L., Pandori, M.W., Sano, T., Vajda, S., Cantor, C.R., and Reznik, G.O.: *Streptavidin Mutants*, Australia Patent No. AU 5917796, granted 03/27/97

Smith, C.L., Pandori, M.W., Sano, T., Vajda, S., Cantor, C.R., and Reznik, G.O.: *Streptavidin Mutants*, Canadian Patent No. CA 2222035, granted 03/27/97

Cantor, C.R., Smits, J.G., and Smith, C.L.: *Piezoelectric Force Sensing Apparatus and Methods for Biopolymer Sequencing*, Australia Patent No. AU 7016896 A1, granted 05/09/97

Cantor, C.R.: *Methods of Preparing Probe Array by Hybridization*, US Patent No. US 5,631,134, granted 05/20/97

Sano, T., Cantor, C.R., and Smith, C.L.: *Immuno-Polymerase Chain Reaction System for Antigen Detection*, US Patent No. US 5,665,539, granted 09/09/97

Szafranski, P., Mello, C.M., Sano, T., Marx, K.A., Cantor, C.R., Kaplan, D.L., and Smith, C.L.: *Biotin-Binding Containment Systems*, US Patent No. US 5,679,533, granted 10/21/97

Szafranski, P., Mello, C.M., Sano, T., Marx, K.A., Cantor, C.R., Kaplan, D.L., and Smith, C.L.: *Biotin-Binding Containment Systems*, US Patent No. US 5,681,745, granted 10/28/97

Edwards, C.A., Fry, K.E., Cantor, C.R., and Andrews, B.M.: *Method of Ordering Sequence Binding Preferences of a DNA-Binding Molecule*, US Patent No. US 5,693,463, granted 12/02/97

Cantor, C.R., Chuck, R.S., and Tse, D.B.: *Design and Synthesis of Bispecific DNA-Antibody Conjugates*, US patent No. US 5,635,602, granted 06/03/97

Edwards, C.A., Fry, K.E., Cantor, C.R., and Andrews, B.M.: *Method of Constructing Sequence-Specific DNA-Binding Molecules*, US Patent No. US 5,716,780, granted 02/10/98

Andrews, B.M., Edwards, C., and Cantor, C.R.: *Method for Inhibiting the Binding of a DNA-binding Protein to Duplex DNA*, European Patent No. EP 0823486, granted 02/11/98

Edwards, C.A., Cantor, C.R., Andrews, B.M. and Turin, L.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, US Patent No. US 5,726,014, granted 03/10/98

Edwards, C.A., Fry, K.E., Cantor, C.R., and Andrews, B.M.: *Sequence-Directed DNA-Binding Molecules Compositions and Methods*, US Patent No. US 5,738,990, granted 04/14/98

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, Australian Patent No. AU 655839 B2, granted 04/22/98

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, European Patent No. EP 0593618, granted 04/22/98

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, Austrian Euro Patent No. EP(AT) 0593618, granted 04/22/98

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, German Euro Patent No. EP(DE) 0593618, granted 04/22/98

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, Denmark Euro Patent No. EP(DK) 0593618, granted 04/22/98

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, Spain Euro Patent No. EP(ES) 0593618, granted 04/22/98

Edwards, C.A., Cantor, C.R., and Andrews, B.M.: *Screening Assay for the Detection of DNA-Binding Molecules*, South Korea Patent No. KR 0235575 B1, granted 04/22/98

Edwards, C.A., Fry, K.E., Cantor, C.R., and Andrews, B.M.: *Sequence-Directed DNA-Binding Molecules Compositions and Methods*, US Patent No. US 5,744,131, granted 04/28/98

O'Donnell, M.J., Cantor, C.R., Little, D.P., and Köster, H.: *High Density Immobilization of Nucleic Acid Molecules*, European Patent No. EP0937096, granted 05/14/98

Smith, C.L., Yaar, R., Szafranski, P., and Cantor, C.R.: *Nucleic Acid Detection Methods*, US Patent No. US 5,753,439, granted 05/19/98

Cantor, C.R., Przetakiweicz, M., Smith, C.L., and Sano, T.: *Methods for Replicating an Array of Nucleic Acid Probes*, US Patent No. US 5,795,714, granted 08/18/98

Reznik, G.O., Sano, T., Vajda, S., Smith, C.L., and Cantor, C. R.: *Multiflavor Streptavidin*, European Patent No. EP 0977770, granted 09/17/98

Reznik, G.L., Sano, T., Vajda, S., Smith, C.L., and Cantor, C.R.: *Multiflavor Streptavidin*, Japan Patent No. JP 2001514524, granted 09/17/98

Reznik, G.L., Sano, T., Vajda, S., Smith, C.L., and Cantor, C.R.: *Multiflavor Streptavidin*, Australia Patent No. AU 6701498, granted 09/17/98

Cantor, C.R., Chuck, R.S., and Tse, D.B.: *Design and Synthesis of Bispecific Reagents: Use of Double-Stranded DNAs as Chemically and Spatially Defined Cross-Linkers*, US Patent No. US 5,849,878, granted 12/15/98

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