

Oct 2001

TOM MANIATIS

Date and place of birth: May 8, 1943; Denver, Colorado, USA

EDUCATION

B.A.	1965	University of Colorado	Biology and Chemistry
M.A.	1967	University of Colorado	Biology
Ph.D.	1971	Vanderbilt University	Molecular Biology
Ph.D. (honorary)	2000	University of Athens	

RESEARCH AND PROFESSIONAL EXPERIENCE

Postdoctoral Fellow
Harvard University (lab of Mark Ptashne), 1971-1973
Medical Research Council of Molecular Biology
(lab of Fred Sanger), Cambridge, England, 1973-1974

Research Associate
Harvard University, 1974-1975

Senior Staff Investigator
Cold Spring Harbor Laboratory, 1975-1977

Assistant Professor of Biochemistry and Molecular Biology
Harvard University, 1975-1977

Associate Professor of Biology
California Institute of Technology, 1977-1979

Professor of Biology
California Institute of Technology, 1979-1981

Professor of Biochemistry and Molecular Biology
Harvard University, 1981-1995

Chairman, Department of Biochemistry and Molecular Biology
Harvard University, 1985-1988

Mallinckrodt Professor of Molecular and Cellular Biology
Harvard University, 1995-1997

Thomas H. Lee Professor of Molecular and Cellular Biology
Harvard University, 1997-present

HONORS

Awards

Rita Allen Foundation Career Development Award, 1978
The Eli Lilly Research Award in Microbiology and Immunology,
American Society of Microbiology, 1981
The Richard Lounsbery Award for Biology and Medicine,
U.S. and French National Academies of Science, 1985
The E. Donnall Thomas Prize, American Society of Hematology, 1994
Katharine Berkan Judd Award, Memorial Sloan-Kettering Cancer Center, 1997
Novartis Drew Award in Biomedical Research, 1998
Jacob Heskell Gabbay Award in Biotechnology and Medicine, Brandeis University, 1999
The 2000 Scientific Achievement Award, American Medical Association, 2000

Academy Memberships

Member, National Academy of Sciences, 1985
Fellow, American Academy of Arts and Sciences, 1985
Fellow, American Association for the Advancement of Science, 1979
Fellow, American Academy of Microbiology, 1993

Service

Molecular Biology Study Section, NIH, 1981-1984; Chairman, 1982-1984
Human Genome Center Grant Committee, NIH, Chairman, 1989-1990
Searle Scholars Program Advisory Committee, 1985-1987
Member, Board of Trustees, Cold Spring Harbor Laboratory, 1986-1992
Associate Editor, Cell, 1980-present
The Jane Coffin Childs Memorial Fund Board of Scientific Advisers, 1989-1992
Howard Hughes Medical Institute, Scientific Review Board, 1989-1993
Member, Editorial Board, Current Opinion in Cell Biology, 1994-present
Member, Editorial Board, RNA, 1995-present
Member, Board of Scientific Consultants, Memorial Sloan-Kettering Cancer Center,
1997-2001
Member, Albert Lasker Medical Research Awards Jury, 2000-present
Member, Board of Governing Trustees, The Jackson Laboratory, 2001-present

PUBLICATIONS

Maniatis, T. and Ptashne, M. (1973). Multiple repressor binding at the operators
in bacteriophage λ . Proc. Natl. Acad. Sci. USA **70**, 1531-1535.

Maniatis, T. and Ptashne, M. (1973). Structure of the λ operators. Nature **246**, 133-136.

Maniatis, T., Venable, J.H., Jr. and Lerman, L.S. (1974). The structure of ψ DNA. J. Mol. Biol. **84**, 37-64.

- Maurer, R., Maniatis, T. and Ptashne, M. (1974). Promoters are in the operators in phage lambda. *Nature* **249**, 221-223.
- Maniatis, T., Ptashne, M., Barrell, B.G. and Donelson, J. (1974). Sequence of a repressor-binding site in the DNA of bacteriophage λ . *Nature* **250**, 394-397.
- Maniatis, T., Ptashne, M., Backman, K., Kleid, D., Flashman, S., Jeffrey, A. and Maurer, R. (1975). Recognition sequences of repressor and polymerase in the operators of bacteriophage lambda. *Cell* **5**, 109-113.
- Maniatis, T., Jeffrey, A. and Kleid, D.G. (1975). Nucleotide sequence of the rightward operator of phage λ . *Proc. Natl. Acad. Sci. USA* **72**, 1184-1188.
- Maniatis, T., Jeffrey, A. and Van deSande, H. (1975). Chain length determination of small double- and single-stranded DNA molecules by polyacrylamide gel electrophoresis. *Biochemistry* **14**, 3787-3794.
- Efstratiadis, A., Maniatis, T., Kafatos, F.C., Jeffrey, A. and Vournakis, J.N. (1975). Full length and discrete partial reverse transcripts of globin and chorion mRNAs. *Cell* **4**, 367-378.
- Maniatis, T. and Ptashne, M. (1976). A DNA operator-repressor system. *Scientific Amer.* **234**, 64-76.
- Efstratiadis, A., Kafatos, F.C., Maxam, A.M. and Maniatis, T. (1976). Enzymatic in vitro synthesis of globin genes. *Cell* **7**, 279-288.
- Maniatis, T., Sim, G.K., Efstratiadis, A. and Kafatos, F.C. (1976). Amplification and characterization of a β -globin gene synthesized in vitro. *Cell* **8**, 163-182.
- Efstratiadis, A., Kafatos, F.C. and Maniatis, T. (1977). The primary structure of rabbit β -globin mRNA as determined from cloned DNA. *Cell* **10**, 571-585.
- Maniatis, T., Hardison, R.C., Lacy, E., Lauer, J., O'Connell, C., Quon, D., Sim, G.K. and Efstratiadis, A. (1978). The isolation of structural genes from libraries of eucaryotic DNA. *Cell* **15**, 687-701.
- Lawn, R.M., Fritsch, E.F., Parker, R.C., Blake, G., and Maniatis, T. (1978). The isolation and characterization of linked δ - and β -globin genes from a cloned library of human DNA. *Cell* **15**, 1157-1174.
- Wigler, M., Sweet, R., Sim, G.K., Wold, B., Pellicer, A., Lacy, E., Maniatis, T., Silverstein, S. and Axel, R. (1979). Transformation of mammalian cells with genes from procaryotes and eucaryotes. *Cell* **16**, 777-785.
- Fritsch, E.F., Lawn, R.M. and Maniatis, T. (1979). Characterisation of deletions which affect the expression of fetal globin genes in man. *Nature* **279**, 598-603.
- Lacy, E., Hardison, R.C., Quon, D. and Maniatis, T. (1979). The linkage arrangement of four rabbit β -like globin genes. *Cell* **18**, 1273-1283.
- Hardison, R.C., Butler, E.T. III, Lacy, E., Maniatis, T., Rosenthal, N. and Efstratiadis, A. (1979). The structure and transcription of four linked rabbit β -like globin genes. *Cell* **18**, 1285-1297.

Wold, B., Wigler, M., Lacy, E., Maniatis, T., Silverstein, S. and Axel, R. (1979). Introduction and expression of a rabbit β -globin gene in mouse fibroblasts. *Proc. Natl. Acad. Sci. USA* **76**, 5684-5688.

Sim, G.K., Kafatos, F.C., Jones, C.W., Koehler, M.D., Efstratiadis, A. and Maniatis, T. (1979). Use of a cDNA library for studies on evolution and developmental expression of the chorion multigene families. *Cell* **18**, 1303-1316.

Fritsch, E.F., Lawn, R.M. and Maniatis, T. (1980). Molecular cloning and characterization of the human β -like globin gene cluster. *Cell* **19**, 959-972.

Shen, C.-K.J. and Maniatis, T. (1980). The organization of repetitive sequences in a cluster of rabbit β -like globin genes. *Cell* **19**, 379-391.

Lauer, J., Shen, C.-K.J. and Maniatis, T. (1980). The chromosomal arrangement of human α -like globin genes: Sequence homology and α -globin gene deletions. *Cell* **20**, 119-130.

Proudfoot, N.J. and Maniatis, T. (1980). The structure of a human α -globin pseudogene and its relationship to α -globin gene duplication. *Cell* **21**, 537-544.

Proudfoot, N.J., Shander, M.H.M., Manley, J.L., Gefter, M.L. and Maniatis, T. (1980). Structure and *in vitro* transcription of human globin genes. *Science* **209**, 1329-1336.

Lawn, R.M., Efstratiadis, A., O'Connell, C. and Maniatis, T. (1980). The nucleotide sequence of the human β -globin gene. *Cell* **21**, 647-651.

Efstratiadis, A., Posakony, J.W., Maniatis, T., Lawn, R.M., O'Connell, C., Spritz, R.A., DeRiel, J.K., Forget, B.G., Weissman, S.M., Slightom, J.L., Blechl, A.E., Smithies, O., Baralle, F.E., Shoulders, C.C. and Proudfoot, N.J. (1980). The structure and evolution of the human β -globin gene family. *Cell* **21**, 653-668.

Lacy, E. and Maniatis, T. (1980). The nucleotide sequence of a rabbit β -globin pseudogene. *Cell* **21**, 545-553.

Shen, C.-K.J. and Maniatis, T. (1980). Tissue-specific DNA methylation in a cluster of rabbit β -like globin genes. *Proc. Natl. Acad. Sci. USA* **77**, 6634-6638.

Mellon, P., Parker, V., Gluzman, Y. and Maniatis, T. (1981). Identification of DNA sequences required for transcription of the human α 1-globin gene in a new SV40 host-vector system. *Cell* **27**, 279-288.

Papayannopoulou, T., Lawn, R.M., Stamatoyannopoulos, G. and Maniatis, T. (1982). Greek (β^A) variant of hereditary persistence of fetal haemoglobin: globin gene organization and studies of expression of fetal haemoglobins in clonal erythroid cultures. *Brit. J. Haematol.* **50**, 387-399.

Shen, C.-K.J. and Maniatis, T. (1982). The organization, structure and *in vitro* transcription of Alu family RNA polymerase III transcription units in the human α -like globin gene cluster: Precipitation of *in vitro* transcripts by lupus anti-La antibodies. *J. Mol. Appl. Genet.* **1**, 343-360.

Treisman, R., Proudfoot, N.J., Shander, M. and Maniatis, T. (1982). A single-base change at a splice site in a β^0 -thalassemic gene causes abnormal RNA splicing. *Cell* **29**, 903-911.

- Zinn, K., Mellon, P., Ptashne, M. and Maniatis, T. (1982). Regulated expression of an extrachromosomal human β -interferon gene in mouse cells. *Proc. Natl. Acad. Sci. USA* **79**, 4897-4901.
- DiMaio, D., Treisman, R. and Maniatis, T. (1982). Bovine papillomavirus vector that propagates as a plasmid in both mouse and bacterial cells. *Proc. Natl. Acad. Sci. USA* **79**, 4030-4034.
- Proudfoot, N.J., Gil, A. and Maniatis, T. (1982). The structure of the human zeta-globin gene and a closely linked, nearly identical pseudogene. *Cell* **31**, 553-563.
- Chao, M.V., Mellon, P., Charnay, P., Maniatis, T. and Axel, R. (1983). The regulated expression of β -globin genes introduced into mouse erythroleukemia cells. *Cell* **32**, 483-493.
- Treisman, R., Orkin, S.H. and Maniatis, T. (1983). Specific transcription and RNA splicing defects in five cloned β -thalassaemia genes. *Nature* **302**, 591-596.
- Green, M.R., Maniatis, T. and Melton, D.A. (1983). Human β -globin pre-mRNA synthesized in vitro is accurately spliced in *Xenopus* oocyte nuclei. *Cell* **32**, 681-694.
- Charnay, P. and Maniatis, T. (1983). Transcriptional regulation of globin gene expression in the human erythroid cell line K562. *Science* **220**, 1281-1283.
- Goldberg, D.A., Posakony, J.W. and Maniatis, T. (1983). Correct developmental expression of a cloned alcohol dehydrogenase gene transduced into the *Drosophila* germ line. *Cell* **34**, 59-73.
- Zinn, K., DiMaio, D. and Maniatis, T. (1983). Identification of two distinct regulatory regions adjacent to the human β -interferon gene. *Cell* **34**, 865-879.
- Treisman, R., Green, M.R. and Maniatis, T. (1983). *Cis* and *trans* activation of globin gene transcription in transient assays. *Proc. Natl. Acad. Sci. USA* **80**, 7428-7432.
- Green, M.R., Treisman, R. and Maniatis, T. (1983). Transcriptional activation of cloned human β -globin genes by viral immediate-early gene products. *Cell* **35**, 137-148.
- Little, P.F.R., Treisman, R., Bierut, L., Seed, B. and Maniatis, T. (1983). Plasmid vectors for the rapid isolation and transcriptional analysis of human β -globin gene alleles. *Mol. Biol. Med.* **1**, 473-488.
- DiMaio, D., Corbin, V., Sibley, E. and Maniatis, T. (1984). High level expression of a cloned HLA heavy chain gene introduced into mouse cells on a bovine papillomavirus vector. *Mol. Cell. Biol.* **4**, 340-350.
- Krainer, A.R., Maniatis, T., Ruskin, B. and Green, M.R. (1984). Normal and mutant human β -globin pre-mRNAs are faithfully and efficiently spliced in vitro. *Cell* **36**, 993-1005.
- Charnay, P., Treisman, R., Mellon, P., Chao, M., Axel, R. and Maniatis, T. (1984). Differences in human α - and β -globin gene expression in mouse erythroleukemia cells: The role of intragenic sequences. *Cell* **38**, 251-263.
- Ruskin, B., Krainer, A.R., Maniatis, T. and Green, M.R. (1984). Excision of an intact intron as a novel lariat structure during pre-mRNA splicing in vitro. *Cell* **38**, 317-331.

Melton, D.A., Krieg, P.A., Rebagliati, M.R., Maniatis, T., Zinn, K. and Green, M.R. (1984). Efficient *in vitro* synthesis of biologically active RNA and RNA hybridization probes from plasmids containing a bacteriophage SP6 promoter. *Nucleic Acids Res.* **12**, 7035-7056.

Charnay, P., Treisman, R., Mellon, P., Chao, M., Axel, R. and Maniatis, T. (1984). Human α - and β -globin gene transcription in mouse erythroleukaemia cells. *Phil. Trans. R. Soc. Lond. B* **307**, 261-270.

Charnay, P., Mellon, P. and Maniatis, T. (1985). Linker scanning mutagenesis of the 5'-flanking region of the mouse β -major globin gene: Sequence requirements for transcription in erythroid and nonerythroid cells. *Mol. Cell. Biol.* **5**, 1498-1511.

Myers, R.M., Lumelsky, N., Lerman, L.S. and Maniatis, T. (1985). Detection of single base substitutions in total genomic DNA. *Nature* **313**, 495-498.

Treisman, R. and Maniatis, T. (1985). Simian virus 40 enhancer increases the number of RNA polymerase II molecules on linked DNA. *Nature* **315**, 72-75.

Reed, R. and Maniatis, T. (1985). Intron sequences involved in lariat formation during pre-mRNA splicing. *Cell* **41**, 95-105.

Myers, R.M., Fischer, S.G., Maniatis, T. and Lerman, L.S. (1985). Modification of the melting properties of duplex DNA by attachment of a GC-rich DNA sequence as determined by denaturing gradient gel electrophoresis. *Nucleic Acids Res.* **13**, 3111-3129.

Myers, R.M., Fischer, S.G., Lerman, L.S. and Maniatis, T. (1985). Nearly all single base substitutions in DNA fragments joined to a GC-clamp can be detected by denaturing gradient gel electrophoresis. *Nucleic Acids Res.* **13**, 3131-3145.

Goodbourn, S., Zinn, K. and Maniatis, T. (1985). Human β -interferon gene expression is regulated by an inducible enhancer element. *Cell* **41**, 509-520.

Myers, R.M., Lerman, L.S. and Maniatis, T. (1985). A general method for saturation mutagenesis of cloned DNA fragments. *Science* **229**, 242-247.

Krainer, A.R. and Maniatis, T. (1985). Multiple factors including the small nuclear ribonucleoproteins U1 and U2 are necessary for pre-mRNA splicing *in vitro*. *Cell* **42**, 725-736.

Fischer, J.A. and Maniatis, T. (1985). Structure and transcription of the *Drosophila mulleri* alcohol dehydrogenase genes. *Nucleic Acids Res.* **13**, 6899-6917.

Myers, R.M., Larin, Z. and Maniatis, T. (1985). Detection of single base substitutions by ribonuclease cleavage at mismatches in RNA:DNA duplexes. *Science* **230**, 1242-1246.

Maniatis, T. (1985). Targeting in mammalian cells. *Nature* **317**, 205-206.

Enoch, T., Zinn, K. and Maniatis, T. (1986). Activation of the human β -interferon gene requires an interferon-inducible factor. *Mol. Cell. Biol.* **6**, 801-810.

- Goodbourn, S., Burstein, H. and Maniatis, T. (1986). The human β -interferon gene enhancer is under negative control. *Cell* **45**, 601-610.
- Zinn, K. and Maniatis, T. (1986). Detection of factors that interact with the human β -interferon regulatory region in vivo by DNAase I footprinting. *Cell* **45**, 611-618.
- Myers, R.M., Tilly, K. and Maniatis, T. (1986). Fine structure genetic analysis of a β -globin promoter. *Science* **232**, 613-618.
- Fischer, J.A. and Maniatis, T. (1986). Regulatory elements involved in *Drosophila Adh* gene expression are conserved in divergent species and separate elements mediate expression in different tissues. *EMBO J.* **5**, 1275-1289.
- Baron, M.H. and Maniatis, T. (1986). Rapid reprogramming of globin gene expression in transient heterokaryons. *Cell* **46**, 591-602.
- Reed, R. and Maniatis, T. (1986). A role for exon sequences and splice-site proximity in splice-site selection. *Cell* **46**, 681-690.
- Myers, R.M., Maniatis, T. and Lerman, L.S. (1987). Detection and localization of single base changes by denaturing gradient gel electrophoresis. *Meth. Enzymol.* **155**, 501-527.
- Maniatis, T., Goodbourn, S. and Fischer, J.A. (1987). Regulation of inducible and tissue-specific gene expression. *Science* **236**, 1237-1245.
- Olo, R. and Maniatis, T. (1987). *Drosophila* Krüppel gene product produced in a baculovirus expression system is a nuclear phosphoprotein that binds to DNA. *Proc. Natl. Acad. Sci. USA* **84**, 5700-5704.
- Atweh, G.F., Wong, C., Reed, R., Antonarakis, S.E., Zhu, D.-e., Ghosh, P.K., Maniatis, T., Forget, B.G. and Kazazian, H.H., Jr. (1987). A new mutation in IVS-1 of the human β globin gene causing β thalassemia due to abnormal splicing. *Blood* **70**, 147-151.
- Maniatis, T. and Reed, R. (1987). The role of small nuclear ribonucleoprotein particles in pre-mRNA splicing. *Nature* **325**, 673-678.
- Goodbourn, S. and Maniatis, T. (1988). Overlapping positive and negative regulatory domains of the human β -interferon gene. *Proc. Natl. Acad. Sci. USA* **85**, 1447-1451.
- Keller, A.D. and Maniatis, T. (1988). Identification of an inducible factor that binds to a positive regulatory element of the human β -interferon gene. *Proc. Natl. Acad. Sci. USA* **85**, 3309-3313.
- Zinn, K., Keller, A., Whittemore, L.-A. and Maniatis, T. (1988). 2-Aminopurine selectively inhibits the induction of β -interferon, *c-fos* and *c-myc* gene expression. *Science* **240**, 210-213.
- Fischer, J.A. and Maniatis, T. (1988). *Drosophila Adh*: A promoter element expands the tissue specificity of an enhancer. *Cell* **53**, 451-461.
- Fischer, J.A., Giniger, E., Maniatis, T. and Ptashne, M. (1988). GAL4 activates transcription in *Drosophila*. *Nature* **332**, 853-856.
- Reed, R., Griffith, J. and Maniatis, T. (1988). Purification and visualization of native spliceosomes. *Cell* **53**, 949-961.

- Abmayr, S.M., Reed, R. and Maniatis, T. (1988). Identification of a functional mammalian spliceosome containing unspliced pre-mRNA. *Proc. Natl. Acad. Sci. USA* **85**, 7216-7220.
- Reed, R. and Maniatis, T. (1988). The role of the mammalian branchpoint sequence in pre-mRNA splicing. *Genes & Dev.* **2**, 1268-1276.
- Fan, C.-M. and Maniatis, T. (1989). Two different virus-inducible elements are required for human β -interferon gene regulation. *EMBO J.* **8**, 101-110.
- Goldfeld, A.E. and Maniatis, T. (1989). Coordinate viral induction of tumor necrosis factor α and interferon β in human B cells and monocytes. *Proc. Natl. Acad. Sci. USA* **86**, 1490-1494.
- Corbin, V. and Maniatis, T. (1989). Role of transcriptional interference in the *Drosophila melanogaster Adh* promoter switch. *Nature* **337**, 279-282.
- Goto, T., Macdonald, P. and Maniatis, T. (1989). Early and late periodic patterns of *even-skipped* expression are controlled by distinct regulatory elements that respond to different spatial cues. *Cell* **57**, 413-422.
- Lenardo, M.J., Fan, C.-M., Maniatis, T. and Baltimore, D. (1989). The involvement of NF- κ B in β -interferon gene regulation reveals its role as a widely inducible mediator of signal transduction. *Cell* **57**, 287-294.
- Abel, T. and Maniatis, T. (1989). Action of leucine zippers. *Nature* **341**, 24-25.
- Corbin, V. and Maniatis, T. (1989). The role of specific enhancer-promoter interactions in the *Drosophila Adh* promoter switch. *Genes & Dev.* **3**, 2191-2200.
- Munro, S. and Maniatis, T. (1989). Expression cloning of the murine interferon γ receptor cDNA. *Proc. Natl. Acad. Sci. USA* **86**, 9248-9252.
- Fan, C.-M. and Maniatis, T. (1990). A DNA-binding protein containing two widely separated zinc finger motifs that recognize the same DNA sequence. *Genes & Dev.* **4**, 29-42.
- Whittemore, L.-A. and Maniatis, T. (1990). Postinduction turnoff of beta-interferon gene expression. *Mol. Cell. Biol.* **64**, 1329-1337.
- Corbin, V. and Maniatis, T. (1990). Identification of *cis*-regulatory elements required for larval expression of the *Drosophila melanogaster* alcohol dehydrogenase gene. *Genetics* **124**, 637-646.
- Fu, X.-D. and Maniatis, T. (1990). Factor required for mammalian spliceosome assembly is localized to discrete regions in the nucleus. *Nature* **343**, 437-441.
- Whittemore, L.-A. and Maniatis, T. (1990). Postinduction repression of the β -interferon gene is mediated through two positive regulatory domains. *Proc. Natl. Acad. Sci. USA* **87**, 7799-7803.
- Amrein, H., Maniatis, T. and Nöthiger, R. (1990). Alternatively spliced transcripts of the sex-determining gene *tra-2* of *Drosophila* encode functional proteins of different size. *EMBO J.* **9**, 3619-3629.

- Michelson, A.M., Abmayr, S.M., Bate, M., Martinez Arias, A., and Maniatis, T. (1990). Expression of a MyoD family member prefigures muscle pattern in *Drosophila* embryos. *Genes & Dev.* **4**, 2086-2097.
- Goldfeld, A.E., Doyle, C. and Maniatis, T. (1990). Human tumor necrosis factor α gene regulation by virus and lipopolysaccharide. *Proc. Natl. Acad. Sci. USA* **87**, 9769-9773.
- Maniatis, T. (1991). Mechanisms of alternative pre-mRNA splicing. *Science* **251**, 33-34.
- Fu, X.-D., Katz, R.A., Skalka, A.M., and Maniatis, T. (1991). The role of branchpoint and 3'-exon sequences in the control of balanced splicing of avian retrovirus RNA. *Genes & Dev.* **5**, 211-220.
- Baron, M.H. and Maniatis, T. (1991). Regulated expression of human α - and β -globin genes in transient heterokaryons. *Mol. Cell. Biol.* **11**, 1239-1247.
- Keller, A.D. and Maniatis, T. (1991). Identification and characterization of a novel repressor of β -interferon gene expression. *Genes & Dev.* **5**, 868-879.
- Hedley, M.L. and Maniatis, T. (1991). Sex-specific splicing and polyadenylation of *dsx* pre-mRNA requires a sequence that binds specifically to *tra-2* protein in vitro. *Cell* **65**, 579-586.
- Keller, A.D. and Maniatis, T. (1991). Selection of sequences recognized by a DNA binding protein using a preparative Southwestern blot. *Nucleic Acids Res.* **19**, 4675-4680.
- Spector, D.L., Fu, X.-D. and Maniatis, T. (1991). Associations between distinct pre-mRNA splicing components and the cell nucleus. *EMBO J.* **10**, 3467-3481.
- Corbin, V., Michelson, A.M., Abmayr, S.M., Neel, V., Alcamo, E., Maniatis, T. and Young, M.W. (1991). A role for the *Drosophila* neurogenic genes in mesoderm differentiation. *Cell* **67**, 311-323.
- Fan, C.-M. and Maniatis, T. (1991). Generation of p50 subunit of NF- κ B by processing of p105 through an ATP-dependent pathway. *Nature* **354**, 395-398.
- Fu, X.-D. and Maniatis, T. (1992). The 35-kDa mammalian splicing factor SC35 mediates specific interactions between U1 and U2 small nuclear ribonucleoprotein particles at the 3' splice site. *Proc. Natl. Acad. Sci. USA* **89**, 1725-1729.
- Falb, D. and Maniatis, T. (1992). A conserved regulatory unit implicated in tissue-specific gene expression in *Drosophila* and man. *Genes & Dev.* **6**, 454-465.
- Abel, T., Bhatt, R. and Maniatis, T. (1992). A *Drosophila* CREB/ATF transcriptional activator binds to both fat body- and liver-specific regulatory elements. *Genes & Dev.* **6**, 466-480.
- Du, W. and Maniatis, T. (1992). An ATF/CREB binding site is required for virus induction of the human interferon β gene. *Proc. Natl. Acad. Sci. USA* **89**, 2150-2154.

- Tian, M. and Maniatis, T. (1992). Positive control of pre-mRNA splicing in vitro. *Science* **256**, 237-240.
- Keller, A.D. and Maniatis, T. (1992). Only two of the five zinc fingers of the eukaryotic transcriptional repressor PRDI-BF1 are required for sequence-specific DNA binding. *Mol. Cell. Biol.* **12**, 1940-1949.
- Fu, X.-D. and Maniatis, T. (1992). Isolation of a complementary DNA that encodes the mammalian splicing factor SC35. *Science* **256**, 535-538.
- Palombella, V.J. and Maniatis, T. (1992). Inducible processing of interferon regulatory factor-2. *Mol. Cell. Biol.* **12**, 3325-3336.
- Falb, D. and Maniatis, T. (1992). *Drosophila* transcriptional repressor protein that binds specifically to negative control elements in fat body enhancers. *Mol. Cell. Biol.* **12**, 4093-4103.
- Thanos, D. and Maniatis, T. (1992). The high mobility group protein HMG I(Y) is required for NF- κ B-dependent virus induction of the human IFN- β gene. *Cell* **71**, 777-789.
- Bruzik, J.P. and Maniatis, T. (1992). Spliced leader RNAs from lower eukaryotes are *trans*-spliced in mammalian cells. *Nature* **360**, 692-695.
- Fu, X.-D., Mayeda, A., Maniatis, T. and Krainer, A.R. (1992). General splicing factors SF2 and SC35 have equivalent activities *in vitro*, and both affect alternative 5' and 3' splice site selection. *Proc. Natl. Acad. Sci. USA* **89**, 11224-11228.
- Falb, D., Fischer, J. and Maniatis, T. (1992). Rearrangement of upstream regulatory elements leads to ectopic expression of the *Drosophila mulleri Adh-2* gene. *Genetics* **132**, 1071-1079.
- Tian, M. and Maniatis, T. (1993). A splicing enhancer complex controls alternative splicing of *doublesex* pre-mRNA. *Cell* **74**, 105-114.
- Du, W., Thanos, D. and Maniatis, T. (1993). Mechanisms of transcriptional synergism between distinct virus-inducible enhancer elements. *Cell* **74**, 887- 898.
- Abel, T., Michelson, A.M. and Maniatis, T. (1993). A *Drosophila* GATA family member that binds to *Adh* regulatory sequences is expressed in the developing fat body. *Development* **119**, 623-633.
- Wu, J.Y. and Maniatis, T. (1993). Specific interactions between proteins implicated in splice site selection and regulated alternative splicing. *Cell* **75**, 1061-1070.
- Winick, J., Abel, T., Leonard, M.W., Michelson, A.M., Chardon-Loriaux, I., Holmgren, R.A., Maniatis, T. and Engel, J.D. (1993). A GATA family transcription factor is expressed along the embryonic dorsoventral axis in *Drosophila melanogaster*. *Development* **119**, 1055-1065.
- Amrein, H., Hedley, M.L. and Maniatis, T. (1994). The role of specific protein-RNA and protein-protein interactions in positive and negative control of pre-mRNA splicing by *Transformer 2*. *Cell* **76**, 735-746.
- Tian, M. and Maniatis, T. (1994). A splicing enhancer exhibits both constitutive and regulated activities. *Genes & Dev.* **8**, 1703-1712.

- Lehming, N., Thanos, D., Brickman, J.M., Ma, J., Maniatis, T. and Ptashne, M. (1994). An HMG-like protein that can switch a transcriptional activator to a repressor. *Nature* **371**, 175-179.
- Tjian, R. and Maniatis, T. (1994). Transcriptional activation: A complex puzzle with few easy pieces. *Cell* **77**, 5-8.
- Palombella, V.J., Rando, O.J., Goldberg, A.L. and Maniatis, T. (1994). The ubiquitin-proteasome pathway is required for processing the NF- κ B precursor protein and the activation of NF- κ B. *Cell* **78**, 773-785.
- Whitley, M.Z., Thanos, D., Read, M.A., Maniatis, T. and Collins, T. (1994). A striking similarity in the organization of the E-selectin and beta interferon gene promoters. *Mol. Cell. Biol.* **14**, 6464-6475.
- Du, W. and Maniatis, T. (1994). The high mobility group protein HMG I(Y) can stimulate or inhibit DNA binding of distinct transcription factor ATF-2 isoforms. *Proc. Natl. Acad. Sci. USA* **91**, 11318-11322.
- Thanos, D. and Maniatis, T. (1995). Identification of the rel family members required for virus induction of the human beta interferon gene. *Mol. Cell. Biol.* **15**, 152-164.
- Lynch, K.W. and Maniatis, T. (1995). Synergistic interactions between two distinct elements of a regulated splicing enhancer. *Genes & Dev.* **9**, 284-293.
- Thanos, D. and Maniatis, T. (1995). NF- κ B: A lesson in family values. *Cell* **80**, 529-532.
- Yang, J.-H., Sklar, P., Axel, R. and Maniatis, T. (1995). Editing of glutamate receptor subunit B pre-mRNA *in vitro* by site-specific deamination of adenosine. *Nature* **374**, 77-81.
- Neish, A.S., Read, M.A., Thanos, D., Pine, R., Maniatis, T. and Collins, T. (1995). Endothelial interferon regulatory factor 1 cooperates with NF- κ B as a transcriptional activator of vascular cell adhesion molecule 1. *Mol. Cell. Biol.* **15**, 2558-2569.
- Read, M.A., Neish, A.S., Luscinskas, F.W., Palombella, V.J., Maniatis, T. and Collins, T. (1995). The proteasome pathway is required for cytokine-induced endothelial-leukocyte adhesion molecule expression. *Immunity* **2**, 1-20.
- Bruzik, J.P. and Maniatis, T. (1995). Enhancer-dependent interaction between 5' and 3' splice sites in trans. *Proc. Natl. Acad. Sci. USA* **92**, 7056-7059.
- Chen, Z., Hagler, J., Palombella, V., Melandri, F., Scherer, D., Ballard, D. and Maniatis, T. (1995). Signal-induced site-specific phosphorylation targets I κ B α to the ubiquitin-proteasome pathway. *Genes & Dev.* **9**, 1586-1597.
- Collins, T., Read, M.A., Neish, A.S., Whitley, M.Z., Thanos, D., and Maniatis, T. (1995). Transcriptional regulation of endothelial cell adhesion molecules: NF- κ B and cytokine-inducible enhancers. *FASEB J.* **9**, 899-909.
- Lazar, G., Schaal, T., Maniatis, T. and Goodman, H.M. (1995). Identification of a plant serine-arginine-rich protein similar to the mammalian splicing factor SF2/ASF. *Proc. Natl. Acad. Sci. USA* **92**, 7672-7676.

Scherer, D.C., Brockman, J.A., Chen, Z., Maniatis, T., and Ballard, D.W. (1995). Signal-induced degradation of I κ B α requires site-specific ubiquitination. Proc. Natl. Acad. Sci. USA **92**, 11259-11263.

Hedley, M.L., Amrein, H. and Maniatis, T. (1995). An amino acid sequence motif sufficient for subnuclear localization of an arginine/serine-rich splicing factor. Proc. Natl. Acad. Sci. USA **92**, 11524-11528.

Thanos, D. and Maniatis, T. (1995). Virus induction of human IFN β gene expression requires the assembly of an enhanceosome. Cell **83**, 1091-1100.

Falvo, J.V., Thanos, D., and Maniatis, T. (1995). Reversal of intrinsic DNA bends in the IFN β gene enhancer by transcription factors and the architectural protein HMG I(Y). Cell **83**, 1101-1111.

Chen, Z.J., Parent, L., and Maniatis, T. (1996). Site-specific phosphorylation of I κ B α by a novel ubiquitination-dependent protein kinase activity. Cell **84**, 853-862.

Zuo, P. and Maniatis, T. (1996). The splicing factor U2AF³⁵ mediates critical protein-protein interactions in constitutive and enhancer-dependent splicing. Genes & Dev. **10**, 1356-1368.

Lynch, K.W. and Maniatis, T. (1996). Assembly of specific SR protein complexes on distinct regulatory elements of the *Drosophila doublesex* splicing enhancer. Genes & Dev. **10**, 2089-2101.

Kim, T.K. and Maniatis, T. (1996). Regulation of interferon- γ -activated STAT1 by the ubiquitin-proteasome pathway. Science **273**, 1717-1719.

Hertel, K.J., Lynch, K.W., Hsiao, E.C., Liu, E.H.-T. and Maniatis, T. (1996). Structural and functional conservation of the *Drosophila doublesex* splicing enhancer repeat elements. RNA **2**, 969-981.

Lee, F.S., Hagler, J., Chen, Z.J. and Maniatis, T. (1997). Activation of the I κ B α kinase complex by MEKK1, a kinase of the JNK pathway. Cell **88**, 213-222.

Powell, D.M., Amaral, M.C., Wu, J.Y., Maniatis, T. and Greene, W.C. (1997). HIV Rev-dependent binding of SF2/ASF to the Rev response element: Possible role in Rev-mediated inhibition of HIV RNA splicing. Proc. Natl. Acad. Sci. USA **94**, 973-978.

Yang, J.-Y., Sklar, P., Axel, R. and Maniatis, T. (1997). Purification and characterization of a human RNA adenosine deaminase for glutamate receptor B pre-mRNA editing. Proc. Natl. Acad. Sci. USA **94**, 4354-4359.

Hertel, K.J., Lynch, K.W. and Maniatis, T. (1997). Common themes in the function of transcription and splicing enhancers. Curr. Opin. Cell Biol. **9**, 350-357.

Maniatis, T. (1997). Catalysis by a multiprotein I κ B kinase complex. Science **278**, 818-819.

Kim, T.K. and Maniatis, T. (1997). The mechanism of transcriptional synergy of an in vitro assembled interferon- β enhanceosome. Mol. Cell **1**, 119-129.

Sears, C., Olesen, J., Rubin, D., Finley, D. and Maniatis, T. (1998). NF- κ B p105 processing via the ubiquitin-proteasome pathway. J. Biol. Chem. **273**, 1409-1419.

Hertel, K.J. and Maniatis, T. (1998). The function of multisite splicing enhancers. *Mol. Cell* **1**, 449-455.

Ren, B. and Maniatis, T. (1998). Regulation of *Drosophila Adh* promoter switching by an initiator-targeted repression mechanism. *EMBO J.* **17**, 1076-1086.

Wathelet, M.G., Lin, C.H., Parekh, B.S., Ronco, L.V., Howley, P.M. and Maniatis, T. (1998). Virus infection induces the assembly of coordinately activated transcription factors on the IFN- β enhancer in vivo. *Mol. Cell* **1**, 507-518.

Graveley, B.R. and Maniatis, T. (1998). Arginine/Serine-rich domains of SR proteins can function as activators of pre-mRNA splicing. *Mol. Cell* **1**, 765-771.

Lee, F.S., Peters, R.T., Dang, L.C. and Maniatis, T. (1998). MEKK1 activates both I κ B kinase α and I κ B kinase β . *Proc. Natl. Acad. Sci. USA* **95**, 9319-9324.

Kim, T.K., Kim, T.H. and Maniatis, T. (1998). Efficient recruitment of TFIIB and CBP-RNA polymerase II holoenzyme by an interferon- β enhanceosome *in vitro*. *Proc. Natl. Acad. Sci. USA* **95**, 12191-12196.

Graveley, B.R., Hertel, K.J. and Maniatis, T. (1998). A systematic analysis of the factors that determine the strength of pre-mRNA splicing enhancers. *EMBO J.* **17**, 6747-6756.

Schaal, T.D. and Maniatis, T. (1999). Multiple distinct splicing enhancers in the protein-coding sequences of a constitutively spliced pre-mRNA. *Mol. Cell. Biol.* **19**, 261-273.

Ren, B., Chee, K.J., Kim, T.H. and Maniatis, T. (1999). PRDI-BF1/Blimp-1 repression is mediated by corepressors of the groucho family of proteins. *Genes & Dev.* **13**, 125-137.

Graveley, B.R., Hertel, K.J. and Maniatis, T. (1999). SR proteins are "locators" of the RNA splicing machinery. *Curr. Biol.* **9**, R6-R7.

Parekh, B.S. and Maniatis, T. (1999). Virus infection leads to localized hyperacetylation of histones H3 and H4 at the IFN- β promoter. *Mol. Cell* **3**, 125-129.

Schaal, T.D. and Maniatis, T. (1999). Selection and characterization of pre-mRNA splicing enhancers: Identification of novel SR protein-specific enhancer sequences. *Mol. Cell. Biol.* **19**, 1705-1719.

Maniatis, T. (1999). A ubiquitin ligase complex essential for the NF- κ B, Wnt/Wingless, and Hedgehog signaling pathways. *Genes & Dev.* **13**, 505-510.

Hertel, K. and Maniatis, T. (1999). Serine-arginine (SR)-rich splicing factors have an exon-independent function in pre-mRNA splicing. *Proc. Natl. Acad. Sci. USA* **96**, 2651-2655.

Wu, Q. and Maniatis, T. (1999). A striking organization of a large family of human neural cadherin-like cell adhesion genes. *Cell* **97**, 779-790.

Gaur, R.K., Beigelman, L., Haerberli, P., and Maniatis, T. (2000). Role of adenine functional groups in the recognition of the 3'-splice-site AG during the second step of pre-mRNA splicing. *Proc. Natl. Acad. Sci. USA* **97**, 115-120.

Falvo, J.V., Ugliarolo, A.M., Brinkman, B.M.N., Merika, M., Parekh, B.S., Tsai, E.Y., King, H.C., Morielli, A.D., Peralta, E.G., Maniatis, T., Thanos, D., and Goldfeld, A.E. (2000). Stimulus-specific assembly of enhancer complexes on the tumor necrosis factor alpha gene promoter. *Mol. Cell Biol.* **20**, 2239-2247.

Peters, R.T., Liao, S.-M., and Maniatis, T. (2000). IKK ϵ is part of a novel PMA-inducible I κ B kinase complex. *Mol. Cell* **5**, 513-522.

Wu, Q. and Maniatis, T. (2000). Large exons encoding multiple ectodomains are a characteristic feature of protocadherin genes. *Proc. Natl. Acad. Sci. USA* **97**, 3124-3129.

Falvo, J.V., Parekh, B.S., Lin, C.H., Fraenkel, E., and Maniatis, T. (2000). Assembly of a functional beta interferon enhanceosome is dependent on ATF-2-c-jun heterodimer orientation. *Mol. Cell Biol.* **20**, 4814-4825.

Silverman, N., Zhou, R., Stöven, S., Pandey, N., Hultmark, D., and Maniatis, T. (2000). A *Drosophila* I κ B kinase complex required for Relish cleavage and antibacterial immunity. *Genes & Dev.* **14**, 2461-2471.

Agalioti, T., Lomvardas, S., Parekh, B., Yie, J., Maniatis, T., and Thanos, D. (2000). Ordered recruitment of chromatin modifying and general transcription factors to the IFN- β promoter. *Cell* **103**, 667-678.

Peters, R.T. and Maniatis, T. (2001). A new family of IKK-related kinases may function as I κ B kinase kinases. *Biochim. Biophys. Acta* **1471**, M57-M62.

Wu, Q., Zhang, T., Cheng, J.-F., Kim, Y., Grimwood, J., Schmutz, J., Dickson, M., Noonan, J.P., Zhang, M.Q., Myers, R.M., and Maniatis, T. (2001). Comparative DNA sequence analysis of mouse and human protocadherin gene clusters. *Genome Res.* **11**, 389-404.

Graveley, B.R., Hertel, K.J., and Maniatis, T. (2001). The role of U2AF³⁵ and U2AF⁶⁵ in enhancer-dependent splicing. *RNA* **7**, 806-818.

Silverman, N. and Maniatis, T. (2001). NF- κ B signaling pathways in mammalian and insect innate immunity. *Genes & Dev.* **15**, 2321-2342.

Lin, C.H., Hare, B.J., Wagner, G., Harrison, S.C., Maniatis, T., and Fraenkel, E. (2001). A small domain of CBP/p300 binds diverse proteins: Solution structure and functional studies. *Mol. Cell* **8**, 581-590.

BOOKS

Maniatis, T., Fritsch, E.F. and Sambrook, J. (1982). *Molecular Cloning: A Laboratory Manual*. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Sambrook, J., Fritsch, E.F. and Maniatis, T. (1989). *Molecular Cloning: A Laboratory Manual*. 2d ed. 3 vol. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

REVIEWS

Maniatis, T., Ptashne, M. and Maurer, R. (1973). Control elements in the DNA of bacteriophage λ . Cold Spring Harbor Symp. Quant. Biol. **38**, 857-868.

Maniatis, T., Efstratiadis, A., Sim, G.K. and Kafatos, F.C. (1976). In vitro synthesis and molecular cloning of eukaryotic structural genes. In: Molecular Mechanisms in the Control of Gene Expression (D.P. Nierlich, W.J. Rutter and C.F. Fox, ed.), Academic Press, p. 513.

Kafatos, F.C., Maniatis, T., Efstratiadis, A., Sim, G.K., Regier, R. and Nadel, M. (1977). The moth chorion as a system for studying the structure of developmentally regulated gene sets. In: Organization and Expression of the Eukaryotic Genome (E.M. Bradbury and K. Javaherian, ed.), Academic Press, London, p. 395.

Maniatis, T., Sim, G.K., Kafatos, F.C., Komaroff, L.V. and Efstratiadis, A. (1977). An approach to the study of developmentally regulated genes. In: Molecular Cloning by Recombinant DNA (W.A. Scott and R. Warner, ed.), Academic Press, San Francisco, p. 173.

Sim, G.K., Efstratiadis, A., Jones, C.W., Kafatos, F.C., Koehler, M., Kronenberg, H.M., Maniatis, T., Regier, J.C., Roberts, B.F. and Rosenthal, N. (1978). Studies on the structure of genes expressed during development. Cold Spring Harbor Symp. Quant. Biol. **42**, 933-945.

Lacy, E., Lawn, R.M., Fritsch, E., Hardison, R.C., Parker, R.C. and Maniatis, T. (1978). Isolation and characterization of mammalian globin genes. In: Cellular and Molecular Regulation of Hemoglobin Switching (G. Stamatoyannopoulos and A. Nienhuis, ed.), Grune and Stratton, New York, p. 501.

Maniatis, T., Fritsch, E.F., Lacy, E., Lawn, R.M. and Parker, R.C. (1978). The structure and organization of linked mammalian globin genes. In: Specific Eukaryotic Genes (H. Klenow and J. Engberg, ed.), Munksgard, Copenhagen, p.133.

Kafatos, F.C., Efstratiadis, A., Goldsmith, M.R., Jones, C.W., Maniatis, T., Regier, J.C., Rodakis, G., Rosenthal, N., Sim, G.K., Thieros, G. and Komaroff, L.V. (1978). The developmentally regulated multigene families encoding chorion proteins in silkworms. In: Differentiation and Development (F. Ahmed, J. Shultz, T.R. Russell and R. Werner, ed.), Academic Press, New York, p. 299.

Wigler, M., Sweet, R., Sim, G.K., Wold, B., Pellicer, A., Lacy, E., Maniatis, T., Silverstein, S. and Axel, R. (1979). Transformation of mammalian cells with prokaryotic and eukaryotic genes. In: Eukaryotic Gene Regulation (R. Axel, T. Maniatis, and C.F. Fox, ed.), ICN-UCLA Symposium, Vol. **14**, Academic Press, New York, p. 457.

Maniatis, T., Butler, E.T. III, Fritsch, E.F., Hardison, R.C., Lacy, E., Lawn, R.M., Parker, R.C. and Shen, C.-K.J. (1979). The linkage arrangement of mammalian β -like globin genes. In: Eukaryotic Gene Regulation (R. Axel, T. Maniatis, and C.F. Fox, ed.), ICN-UCLA Symposium, Vol. **14**, Academic Press, pp. 317-333.

Maniatis, T. and Efstratiadis, A. (1979). Fractionation of low molecular weight DNA or RNA in polyacrylamide gels containing 98% formamide or 7 M urea. In: Meth. Enzymol., Vol. **65**, Part 1, Academic Press, New York, p. 299.

Maniatis, T. (1980). Recombinant DNA procedures in the study of eukaryotic genes. In: Cell Biology: A Comprehensive Treatise, Vol. 3 (L. Goldstein and D. Prescott, ed.), Academic Press, New York, pp. 563-608.

Maniatis, T., Fritsch, E.F., Lauer, J. and Lawn, R.M. (1980). The molecular genetics of human hemoglobins. *Ann. Rev. Genet.* **14**, 145-178.

Fritsch, E.F., Shen, C.K.J., Lawn, R.M. and Maniatis, T. (1981). The organization of repetitive sequences in mammalian globin gene clusters. *Cold Spring Harbor Symp. Quant. Biol.*, Vol. **45**, 761-775.

Maniatis, T., Fritsch, E.F., Lauer, J., Lawn, R.M., Proudfoot, N.J., Shander, M.H.M. and Shen, C.-K.J. (1981). The structure and chromosomal arrangement of human globin genes. In: *Organization and Expression of Globin Genes* (G. Stamatoyannopoulos and A. Nienhuis, ed.), Alan R. Liss, New York, pp. 15-31.

Hardison, R.C., Lacy, E., Shen, C.-K.J., Butler, E.T. III and Maniatis, T. (1981). The β -like globin gene family of rabbits. In: *Organization and Expression of Globin Genes* (G. Stamatoyannopoulos and A. Nienhuis, ed.), Alan R. Liss, New York, pp. 89-99.

Maniatis, T., Mellon, P., Parker, V., Proudfoot, N. and Seed, B. (1982). Molecular genetics of human globin gene expression. In: *Molecular Genetic Neuroscience* (F.O. Schmitt, S.J. Bird and F.E. Bloom, ed.), Raven Press, New York, pp. 87-101.

Treisman, R., Seed, B., Little, P., Green, M., Proudfoot, N. and Maniatis, T. (1982). An approach to the analysis of the structure and expression of mutant globin genes. In: *Eukaryotic Viral Vectors* (Y. Gluzman, ed.), Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

DiMaio, D. and Maniatis, T. (1982). Intact bovine papillomavirus-human DNA recombinant plasmids that propagate as episomes in mouse cells and bacteria. In: *Eukaryotic Viral Vectors* (Y. Gluzman, ed.), Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, pp. 93-97.

Chao, M., Mellon, P., Wold, B., Maniatis, T. and Axel, R. (1982). Regulation of globin genes introduced into MEL cells. In: *Proceedings of the Symposium on Hemoglobin Synthesis* (E. Goldwasser, ed.), Elsevier N. Holland, New York.

Mellon, P., Charnay, P., Chao, M., Axel, R. and Maniatis, T. (1983). Regulated expression of cloned globin genes introduced into mouse erythroleukemia cells. In: *Globin Gene Expression and Hematopoietic Differentiation* (G. Stamatoyannopoulos and A. Nienhuis, ed.), Alan R. Liss, New York, pp. 3-12.

Treisman, R., Orkin, S.H. and Maniatis, T. (1983). Structural and functional defects in β -thalassemia. In: *Globin Gene Expression and Hematopoietic Differentiation* (G. Stamatoyannopoulos and A. Nienhuis, ed.), Alan R. Liss, New York, pp. 99-121.

Treisman, R., Green, M.R. and Maniatis, T. (1984). Transcriptional activation of a cloned human β -globin gene by *cis*- and *trans*-acting viral control elements. In: *Cancer Cells 2: Oncogenes and Viral Genes*, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, pp. 545-556.

Posakony, J.W., Goldberg, D.A. and Maniatis, T. (1984). Correct developmental and tissue specific expression of a cloned alcohol dehydrogenase gene introduced into the *Drosophila* germ line by

P element transformation. In: Transfer and Expression of Eukaryotic Genes, Academic Press, pp. 23-37.

Posakony, J.W., Fischer, J.A. and Maniatis, T. (1985). Identification of DNA sequences required for the regulation of *Drosophila* alcohol dehydrogenase gene expression. In: Cold Spring Harbor Symp. Quant. Biol., Vol. **50**, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, pp. 515-520.

Posakony, J.W., Fischer, J.A., Corbin, V. and Maniatis, T. (1985). Identification of DNA sequences required for the regulation of *Drosophila* alcohol dehydrogenase (*Adh*) gene expression. In: Eukaryotic Transcription (Y. Gluzman, ed.), Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, pp. 194-200.

Krainer, A., Reed, R., and Maniatis, T. (1985). Sequences and factors involved in pre-mRNA splicing *in vitro*. In: Sequence Specificity in Transcription and Translation (R. Calendar and L. Gold, ed.), UCLA Symposia on Molecular and Cellular Biology, New Series **30**, Alan R. Liss, New York, pp. 461-473.

Krainer, A.R., Reed, R. and Maniatis, T. (1985). Mechanisms of human β -globin pre-mRNA splicing. In: Proceedings of the Robert A. Welch Foundation Conferences on Chemical Research. Genetic Chemistry: The Molecular Basis of Heredity, Vol. **29**, pp. 353-382.

Myers, R.M. and Maniatis, T. (1986). Recent advances in the development of methods for detecting single-base substitutions associated with human genetic diseases. In: Cold Spring Harbor Symp. Quant. Biol., Vol. **51**, Part 2, pp. 275-284.

Reed, R. and Maniatis, T. (1987). Exon sequences and splice site proximity play a role in splice site selection. In: New Perspectives on the Molecular Biology of RNA (B.S. Dudock and M. Inouye, ed.), Academic Press, New York, pp. 81-95.

Baron, M. and Maniatis, T. (1987). Stage-specific reprogramming of globin gene expression. In: Developmental Control of Globin Gene Expression (G. Stamatoyannopoulos and A.W. Nienhuis, ed.), Vol. **251**, Alan R. Liss, New York, pp. 271-284.

Maniatis, T. (1988). Mechanisms of human β -interferon gene regulation. In: The Harvey Lectures, Series 82, Alan R. Liss, New York, pp. 71-104.

Krainer, A.R. and Maniatis, T. (1988). RNA splicing. In: Frontiers in Molecular Biology: Transcription and Splicing (B.D. Hames and D.M. Glover, ed.), IRL Press, Oxford and Washington, pp. 131-206.

Maniatis, T. and Weintraub, H. (1992). Gene expression and differentiation. *Curr. Opin. Gen. Dev.* **2**, 197-198.

Abmayr, S.M., Michelson, A.M., Corbin, V., Young, M.W., and Maniatis, T. (1992). *nautilus*, a *Drosophila* member of the myogenic regulatory gene family. In: Neuromuscular Development and Disease (A.M. Kelly and H.M. Blau, ed.), Raven Press, New York, pp. 1-16.

Maniatis, T., Whittemore, L.-A., Du, W., Fan, C.-M., Keller, A.D., Palombella, V.J.

and Thanos, D.N. (1992). Positive and negative control of human interferon- β gene expression. In: Transcriptional Regulation, Part 2 (S.L. McKnight and K.R. Yamamoto, ed.), Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, pp. 1193-1220.

Thanos, D., Du, W. and Maniatis, T. (1993). The high mobility group protein HMG I(Y) is an essential structural component of a virus-inducible enhancer complex. In: DNA and Chromosomes. Cold Spring Harbor Symp. Quant. Biol. **58**, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, pp. 73-81.

Abel, T. and Maniatis, T. (1994). Mechanisms of eukaryotic gene regulation. In: The Molecular Basis of Blood Diseases, 2d ed. (G. Stamatoyannopoulos, A.W. Nienhuis, P.W. Majerus and H. Varmus, ed.), W.B. Saunders, Philadelphia, pp. 33-70.

Thanos, D. and Maniatis, T. (1996). *In vitro* assembly of enhancer complexes. In: Methods in Enzymology: RNA Polymerase and Associated Factors, Part B, Vol. **274** (S. Adhya, ed.), Academic Press, San Diego, pp. 162-173.

Chen, Z.J. and Maniatis, T. (1998). Role of the ubiquitin-proteasome pathway in NF- κ B activation. In: Ubiquitin and the Biology of the Cell (J.-M. Peters, J.R. Harris and D. Finley, ed.), Plenum, New York, pp. 303-322.

Maniatis, T., Falvo, J.V., Kim, T.H., Kim, T.K., Lin, C.H., Parekh, B.S. and Wathelet, M.G. (1998). Structure and function of the interferon- β enhanceosome. In: Mechanisms of Transcription, Cold Spring Harbor Symp. Quant. Biol. **63**, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, pp. 609-620.

Lee, F.S., Peters, R.T., Chen, Z.J., and Maniatis, T. (2001). Activation of nuclear factor- κ B. In: Leukocyte Recruitment, Endothelial Cell Adhesion Molecules, and Transcriptional Control: Insights for Drug Discovery (T. Collins, ed.), Chap. 6, Kluwer Academic Publishers, Norwell, MA.

Maniatis, T. Split Genes. In: Encyclopedia of Genetics (S. Brenner and J. Miller, eds.), Academic Press (in press.).