

## References

"Are you not ashamed to be thus miserable when, not fifty yards from you there is an old automaton who thinks of nothing and lives contented?"

"You are right," he replied. "I have said to myself a thousand times that I should be happy if I were but as ignorant as my old neighbour, and yet it is a happiness I do not desire"

- *The Good Brahmin* Voltaire.

Ades, S.E. and R.T. Sauer (1994). "Differential DNA-binding Specificity of the Engrailed Homeodomain: The Role of Residue 50." *Biochemistry* **33**: 9187-9194.

Affolter, M., A. Percival-smith, M. Muller, W. Leupin and W.J. Gehring (1990). "DNA-binding properties of the purified Antennapedia homeodomain." *Proc. Natl. Acad. Sci. (USA)* **87**: 4093-4097.

Aggarwal, A.K., D.W. Rodgers, M. Drottar, M. Ptashne and S.C. Harrison (1988). "Recognition of a DNA operator by the repressor of phage 434: a view at high resolution." *Science* **242**: 899-907.

Appel, B. and S. Sakonju (1993). "Cell-type-specific mechanisms of transcriptional repression by the homeotic gene products UBX and ABD-A in *Drosophila* embryos." *EMBO J.* **12**: 1099-1109.

Ausubel, S.F., R. Brent, R.E. Kingston, D. Moore, J.A. Smith, J.G. Seidman and K. Struhl (1987). Current Protocols in Molecular Biology. New York, Wiley.

Beachy, P.A., M.A. Krasnow, E.R. Gavis and D.S. Hogness (1988). "An Ultrabithorax protein binds sequences near its own and the Antennapedia P1 promoters." *Cell* **55**: 1069-81.

Beachy, P.A., J. Varkey, K.E. Young, D.P.v. Kessler, B.I. Sun and S.C. Ekker (1993). "Cooperative Binding of an Ultrabithorax Homeodomain Protein to Nearby and Distant DNA Sites." *Mol. Cell. Biol.* **13**: 6941-6956.

Blackwell, T.K., J. Huang, A. Ma, L. Kretzner, F.W. Alt, R.N. Eisenman and H. Weintraub (1993). "Binding of Myc Proteins to Canonical and Noncanonical DNA Sequences." *Mol. Cell. Biol.* **13**: 5216-5224.

Boulikas, T. (1993). "Homeodomain protein binding sites, inverted repeats, and nuclear matrix attachment regions along the human  $\beta$ -globin gene complex." *Journal of Cellular Biochemistry* **52**: 23-36.

Bourbon, H.-M., E. Martin-Blanco, D. Rosen and T.B. Kornberg (1995). "Phosphorylation of the *Drosophila* Engrailed Protein at a Site Outside Its Homeodomain Enhances DNA binding." *J. Biol. Chem.* **270**: 11130-11139.

Bourgouin, C., S.E. Lundgren and J.B. Thomas (1992). "apterous is a *Drosophila* LIM domain gene required for the development of a subset of embryonic muscles." *Neuron* **9**: 549-561.

Breathnach and Chambon (1981). "Organisation and expression of eukaryotic split genes coding for proteins." *Annual review of Biochemistry* **50**: 349-383.

- Brown, N.H. and F.C. Kafatos (1988). "Functional cDNA Libraries from *Drosophila* Embryos." *J. Mol. Biol.* **203**: 425-437.
- Cairns, B.R., Y.-J. Kim, M.H. Sayre, B.C. Laurent and R.D. Kornberg (1994). "A multisubunit complex containing the *SWI1/ADR6*, *SWI2/SNF2*, *SWI3*, *SNF5*, and *SNF6* gene products isolated from yeast." *Proc.Natl.Acad.Sci. USA* **91**: 1950-1954.
- Capovilla, M., M. Brandt and J. Botas (1994). "Direct regulation of *decapentaplegic* by *Ultrabithorax* and its role in *Drosophila* midgut morphogenesis." *Cell* **76**: 461-476.
- Carlson, M. and B.C. Laurent (1994). "The SWI/SNF family of global transcriptional activators." *Curr. Op. Cell Biol.* **6**: 396-402.
- Cavener, D.R. (1987). "Comparison of the consensus sequence flanking translational start sites in *Drosophila* and vertebrates." *Nucleic Acids Res.* **15**: 1353-1361.
- Chan, S.-K., L. Jaffe, M. Capovilla, J. Botas and R.S. Mann (1994). "The DNA binding specificity of Ultrabithorax is modulated by cooperative interactions with extradenticle, another homeoprotein." *Cell* **78**: 603-615.
- Chan, S.-K. and R.S. Mann (1993). "The segment identity functions of Ultrabithorax are contained within its homeo domain and carboxy-terminal sequences." *Genes & Dev.* **7**: 796-811.
- Chou, P.Y. and G.D. Fasman (1978). "Prediction of the secondary structure of proteins from their amino acid sequence." *Advances in Enzymology* **47**: 45-147.
- Chou, T.-B. and N. Perrimon (1992). "Use of a Site-Specific Recombinase to Produce Female Germline Chimeras in *Drosophila*." *Genetics* **131**: 643-653.
- Cockerill, P.N. and W.T. Garrard (1986). "Chromosomal loop anchorage of the Kappa immunoglobulin gene occurs next to the enhancer in a region containing topoisomerase II sites." *Cell* **44**: 273-282.
- Cohen, B., M.E. McGuffin, C. Pfeifle, D. Segal and S.M. Cohen (1992). "apterous, a gene required for imaginal disc development in *Drosophila*, encodes a member of the LIM family of developmental regulatory proteins." *Genes & Dev.* **6**: 715-752.
- Côté, J., J. Quinn, J.L. Workman and C.L. Peterson (1994). "Stimulation of GAL4 derivative binding to nucleosomal DNA by the yeast SWI/SNF complex." *Science* **265**: 53-60.
- Desplan, C., J. Theis and P. O'Farrell (1985). "The *Drosophila* developmental gene, *engrailed*, encodes a sequence-specific DNA-binding activity." *Nature* **318**: 630-635.
- Desplan, C., J. Theis and P.H. O'Farrell (1988). "The sequence specificity of homeodomain-DNA interaction." *Cell* **54**: 1081-90.
- Dessain, S., C.T. Gross, M.A. Kuziora and W. McGinnis (1992). "Antp-type homeodomains have distinct DNA binding specificities that correlate with their different functions in embryos." *EMBO J.* **11**: 991-1002.
- Dingwall, A.K., S.J. Beek, C.M. McCallum, J.W. Tamkun, G.J. Kalpana, S.P. Goff and M.P. Scott (1995). "The *Drosophila* snr1 and brm proteins are related to Yeast SWI/SNF proteins and are components of a large protein complex." *Molecular Biology of the Cell* **6**: 777-791.

- Dranginis, A.M. (1990). "Binding of yeast a1 and a2 as a heterodimer to the operator DNA of a haploid specific gene." *Nature* **347**: 682.
- Driever, W. and C. Nusslein-Volhard (1989). "The bicoid protein is a positive regulator of *hunchback* transcription in the early *Drosophila* embryo." *Nature* **337**: 138-143.
- Duboule, D. and P. Dolle (1989). "The structural and functional organisation of the murine Hox gene family resembles that of the *Drosophila* homeotic genes." *EMBO J.* **8**: 1497-1505.
- Dunaief, J.L., B.E. Strober, S. Guha, P.A. Khavari, K. Alin, J. Luban, M. Begemann, G.R. Crabtree and S.P. Goff (1994). "The retinoblastoma protein and BRG1 form a complex and cooperate to induce cell cycle arrest." *Cell* **79**: 119-130.
- Ekker, S.C., D.G. Jackson, D.P.v. Kessler, B.I. Sun, K.E. Young and P.A. Beachy (1994). "The degree of variation in DNA sequence recognition among four *Drosophila* homeotic proteins." *EMBO J.* **13**: 3551-3560.
- Ekker, S.C., D.P.v. Kessler and P.A. Beachy (1992). "Differential DNA sequence recognition is a determinant of specificity in homeotic gene action." *EMBO J.* **11**: 4059-4072.
- Ekker, S.C., K.E. Young, D.P.v. Kessler and P.A. Sharp (1991). "Optimal DNA sequence recognition by the Ultrabithorax homeodomain of *Drosophila*." *EMBO J.* **10**: 1179-1186.
- Faisst, S. and S. Meyer (1992). "Compilation of vertebrate-encoded transcription factors." *Nucleic Acids Res.* **20**: 3-26.
- Fattaey, A.R., K. Helin, M.S. Dembski, N. Dyson, E. Harlow, G.A. Vuocolo, M.G. Hanobik, K.M. Haskell, A. Oliff, D. Defeo-Jones and R.E. Jones (1993). "Characterisation of the retinoblastoma binding proteins RBP1 and RBP2." *Oncogene* **8**: 3149-3156.
- Florence, B., R. Handrow and A. Laughon (1991). "DNA-binding Specificity of the fushi tarazu Homeodomain." *Mol. Cell. Biol.* **11**: 3613-3623.
- Fortini, M.E., Z. Lai and G.M. Rubin (1991). "The *Drosophila* zfh-1 and zfh-2 genes encode novel proteins containing both zinc-finger and homeodomain motifs." *Mech. Develop.* **34**: 113-122.
- Furukubo-Tokunaga, K., S. Flister and W.J. Gehring (1993). "Functional specificity of the Antennapedia homeodomain." *Proc. Natl. Acad. Sci. (USA)* **90**: 6360-6364.
- Furukubo-Tokunaga, K., M. Muller, M. Affolter, L. Pick, U. Kloster and W.J. Gehring (1992). "In vivo analysis of the helix-turn-helix motif of the fushi tarazu homeo domain of *Drosophila melanogaster*." *Genes & Dev.* **6**: 1082-1096.
- Gerster, T. and R.G. Roeder (1988). "A herpesvirus trans-activating protein interacts with transcription factor OTF-1 and other cellular proteins." *Proc. Natl. Acad. Sci. (USA)* **85**: 6347-6352.
- Gibson, G., A. Schier, P. LeMotte and W.J. Gehring (1990). "The Specificities of Sex combs reduced and Antennapedia are Defined by a Distinct Portion of Each Protein That Includes the Homeodomain." *Cell* **62**: 1087-1103.

- Gilbert, W. (1976). Starting and stopping sequences for the RNA polymerase. RNA Polymerase. Cold Spring Harbour Laboratory. 193-205.
- Gonzales-Reyes, A. and G. Morata (1990). "The developmental effect of overexpressing a Ubx product in *Drosophila* embryos is dependant on its interactions with other homeotic products." *Cell* **61**: 515-522.
- Graham, A., N. Papalopulu and R. Krumlauf (1989). "The murine and *Drosophila* homeobox gene complexes have common features of organisation and expression." *Cell* **57**: 367-378.
- Gross, M.K. and P. Gruss (1995). "Selection of Ten Base-pair Sequences which Enhance the Response of the Gal1 Minimal Promoter to Murine Hoxa-7 in Yeast." *J. Mol. Biol* **247**: 173-190.
- Grueneberg, D.A., S. Natesan, C. Alexandre and M.Z. Gilman (1992). "Human and *Drosophila* homeodomain proteins that enhance the DNA-binding activity of serum response factor." *Science* **257**: 1089-1095.
- Grueneberg, D.A., K.J. Simon, K. Brennan and M. Gilman (1995). "Sequence-specific Targeting of Nuclear Signal Transduction Pathways by Homeodomain Proteins." *Mol. Cell. Biol.* **15**: 3318-3326.
- Haas, N.B., C.A. Cantwell, P.F. Johnson and J.B.E. Burch (1995). "DNA-binding Specificity of the PAR Leucine Zipper Protein VBP Partially overlaps those of the C/EBP and CREB/ATF Families and is Influenced by Domains That Flank the Core Basic Region." *Mol. Cell. Biol.* **15**: 1923-1932.
- Halder, G., P. Callaerts and W.J. Gehring (1995). "Induction of ectopic eyes by targeted expression of the *eyeless* gene in *Drosophila*." *Science* **267**: 1788-1792.
- Hanahan, D. (1983). "Studies on transformation of E. coli with plasmids." *J. Mol. Biol* **166**: 577-580.
- Hanes, S.D. and R. Brent (1989). "DNA Specificity of the Bicoid Activator Protein Is Determined by Homeodomain Recognition Helix Residue 9." *Cell* **57**: 1275-1283.
- Hanes, S.D. and R. Brent (1991). "A genetic model for interaction of the homeodomain recognition helix with DNA." *Science* **251**: 426-430.
- Hanes, S.D., G. Riddihough, D. Ish-Horowicz and R. Brent (1994). "Specific DNA recognition and intersite spacing are critical for the action of the Bicoid morphogen." *Mol. Cell. Biol.* **14**: 3364-3375.
- Haran, T.E., A. Joachimiak and P.B. Sigler (1992). "The DNA target of the *trp* repressor." *EMBO J.* **11**: 3021-3030.
- Hayashi, S. and M.P. Scott (1990). "What determines the specificity of action of *Drosophila* homeodomain proteins?" *Cell* **63**: 883-894.
- Heberlein, U., A. Penton, S. Falsafi, D. Hackett and G.M. Rubin (1994). "The C-terminus of the homeodomain is required for functional specificity of the *Drosophila* *rough* gene." *Mech. Develop.* **48**: 35-49.

Herrschner, R.F., M.H. Kaplan, D.L. Lelsz, C. Das, R. Scheuermann and P.W. Tucker "The immunoglobulin heavy chain MARs are bound by Bright: A B-cell specific transactivator that describes a new DNA-binding protein family." *Genes and Development* (in press)

Hirschhorn, J.N., S.A. Brown, C.D. Clark and F. Winston (1992). "Evidence that SNF2/SWI2 and SNF5 activate transcription in yeast by altering chromatin structure." *Genes & Dev.* **6**: 2288-2298.

Hochschild, A. and M. Ptashne (1986). "Cooperative Binding of lambda Repressors to Sites Separated by Integral Turns of the DNA Helix." *Cell* **44**: 681-687.

Hoey, T. and M. Levine (1988). "Divergent homeo box proteins recognise similar DNA sequences in *Drosophila*." *Nature* **332**: 858-861.

Ingraham, H.A., S.E. Flynn, J.W. Voss, V.R. Albert, M.S. Kapiloff, L. Wilson and M.G. Rosenfeld (1990). "The POU specific domain of Pit-1 is essential for sequence-specific high affinity DNA binding and DNA-dependant Pit-1-Pit-1 interactions." *Cell* **61**: 1021-1033.

Jaynes, J.B., and O'Farrell, P.H. (1988). "Activation and repression of transcription by homeodomain-containing proteins that bind a common site." *Nature* **336**: 744-749.

Jiang, J., T. Hoey and M. Levine (1991). "Autoregulation of a segmentation gene in *Drosophila*: combinatorial interaction of the even-skipped homeo box protein with a distal enhancer element." *Genes & Dev.* **5**: 265-277.

John, A., S.T. Smith and J.B. Jaynes (1995). "Inserting the Ftz homeodomain into Engrailed creates a dominant transcriptional repressor that specifically turns off Ftz target genes in vivo." *Development* **121**: 1801-1813.

Johnson, A. (1993). A combinatorial regulatory circuit in budding yeast. Transcriptional regulation. Cold Spring Harbour, CSHL Press. 975-1006.

Kalionis, B. and P.H. O'Farrell (1993). "A universal target sequence is bound *in vitro* by diverse homeodomains." *Mech. Develop.* **43**: 57-70.

Kassis, J.A., E. Noll, E.P. Van Sickle, W.F. Odenwald and N. Perrimon (1992). "Altering the insertional specificity of a *Drosophila* transposable element." *Proc. Natl. Acad. Sci. (USA)* **89**: 1919-1923.

Kaufman, T.C., R. Lewis and B. Wakimoto (1980). "Cytogenetic analysis of Chromosome 3 in *Drosophila melanogaster*: the homeotic gene complex in polytene chromosome interval 84A-B". *Genetics* **994**: 115-133.

Keleher, C.A., C. Goutte and A.D. Johnson (1988). "The yeast cell-type-specific repressor a2 acts cooperatively with a non-cell-type-specific protein." *Cell* **53**: 927-936.

Kennison, J.A. (1993). "Transcriptional activation of *Drosophila* homeotic genes from distant regulatory elements." *Trends Genet.* **9**: 75-79.

Kispert, A., B.G. Herrmann, M. Leptin and R. Reuter (1994). "Homologs of the mouse *Brachyury* gene are involved in the specification of posterior terminal structures in *Drosophila*, *Tribolium* and *Locusta*." *Genes & Dev.* **8**: 2137-2150.

- Kissinger, C.R., B. Liu, E. Martin-Blanco, T.B. Kornberg and C.O. Pabo (1990). "Crystal structure of an engrailed homeodomain-DNA complex at 2.8 Å resolution: a framework for understanding homeodomain-DNA interactions." *Cell* **63**: 579-590.
- Klehr, D., K. Maass and J. Bode (1991). "Scaffold-attached regions from the human interferon beta domain can be used to enhance the stable expression of genes under the control of various promoters." *Biochemistry* **30**: 1264-1270.
- Kouzarides, T. and E. Ziff (1989). "Leucine zippers of *fos*, *jun*, and GCN4 dictate dimerisation specificity and thereby control DNA binding." *Nature* **340**: 568-571.
- Krause, H.M., R. Klemenz and W.J. Gehring (1988). "Expression, modification and localisation of the fushi tarazu protein of *Drosophila*." *Genes & Dev.* **2**: 1021-1036.
- Kurzig-Dumke, U., B. Phannavong, D. Gundacker and G. E (1992). "Genetic, cytogenetic and developmental analysis of the *Drosophila melanogaster* tumour suppressor gene *lethal(2)tid*." *Differentiation* **51**: 91-104.
- Kuziora, M.A. and W. McGinnis (1988). "Autoregulation of a *Drosophila* homeotic selector gene." *Cell* **55**: 477-485.
- Kuziora, M.A. and W. McGinnis (1989). "A Homeodomain Substitution Changes the Regulatory Specificity of the Deformed protein in *Drosophila* embryos." *Cell* **59**: 563-571.
- Kwon, H., A.N. Imbalzano, P.A. Khavari, R.E. Kingston and M.R. Green (1994). "Nucleosome disruption and enhancement of activator binding by a human SWI/SNF complex." *Nature* **370**: 477-481.
- Lamka, M.L., A.M. Boulet and S. Sakonju (1992). "Ectopic expression of UBX and ABD-B proteins during *Drosophila* embryogenesis: competition, not a functional hierarchy, explains phenotypic suppression." *Development* **116**: 841-154.
- Laughon, A. (1991). "DNA Binding Specificity of Homeodomains." *Biochemistry* **30**: 11357-11367.
- Lewis, E.B. (1978). "A gene complex controlling segmentation in *Drosophila*." *Nature* **276**: 565-570.
- Lin, L. and W. McGinnis (1992). "Mapping functional specificity in the Dfd and Ubx homeo domains." *Genes & Dev.* **6**: 1071-1081.
- Lin, S.-Y. and A.D. Riggs (1975). "The General Affinity of *lac* Repressor for *E. coli* DNA: Implications for Gene Regulation in Prokaryotes and Eukaryotes." *Cell* **4**: 107-111.
- Lindsley, D.L. and G.G. Zimm (1992). The Genome of *Drosophila melanogaster*. San Diego, Academic Press.
- Lis, J.T., J.A. Simon and C.A. Sutton (1983). "New heat shock puffs and B-galactosidase activity resulting from transformation of *Drosophila* with an *hsp70-lacZ* hybrid gene." *Cell* **35**: 403-410.
- Lockett, T.J., P.A.B. Moretti, J. Lake and R. Saint (1993). "*rough* genes with *Deformed* homeobox substitutions exhibit *rough* biological specificity during *Drosophila* eye development." *Mech. Develop.* **41**: 57-68.

- MacDonald, R.J., G.H. Swift, A.E. Przybyla and J.M. Chirgwin (1987). "Isolation of RNA using guanidinium salts." *Methods in Enzymology* **152**: 219-227.
- Manak, J.R., L.D. Mathies and M.P. Scott (1994). "Regulation of a decapentaplegic midgut enhancer by homeotic proteins." *Development* **120**: 3605-3619.
- Mancini, M.A., B. Shan, J.A. Nickerson, S. Penman and W.-H. Lee (1994). "The retinoblastoma gene product is a cell-cycle dependent, nuclear matrix-associated protein." *Proc. Natl. Acad. Sci. (USA)* **91**: 418-422.
- Mann, R.S. (1995). "The specificity of homeotic gene function." *Bioessays* **17**: 855-863.
- Mann, R.S. and D.S. Hogness (1990). "Functional Dissection of Ultrabithorax Proteins in *D. melanogaster*." *Cell* **60**: 597-610
- McCormick, A., N. Core, S. Kerridge and M.P. Scott (1995). "Homeotic response elements are tightly linked to tissue-specific elements in a transcriptional enhancer of the *teashirt* gene." *Development* **121**: 2799-2812.
- McGinnis, W., R.L. Garber, J. Wirz, A. Kuroiwa and W.J. Gehring (1984). "A homologous protein-coding sequence in *Drosophila* homeotic genes and its conservation in other metazoans." *Cell* **37**: 403-408.
- McGinnis, W. and R. Krumlauf (1992). "Homeobox genes and axial patterning." *Cell* **68**: 969-976.
- Morata, G. and A. García-Bellido (1976). "Developmental analysis of some mutations of the bithorax system of *Drosophila*." *Roux's Archives of Developmental Biology* **179**: 125-143.
- Muller, J. (1995). "Transcriptional silencing by the Polycomb protein in *Drosophila* embryos." *EMBO J.* **14**: 1209-1220.
- Murphy, G. and T. Kavanagh (1988). "Speeding-up the sequencing of double-stranded DNA." *Nucleic Acids Res.* **16**: 5198.
- Murre, C., P.S. McCaw, H. Vaessin, M. Caudy, L.Y. Jan, Y.N. Jan, C.V. Cabrera, J.N. Buskin, S.D. Hauschka and A.B. Lassar (1989). "Interactions between heterologous helix-loop-helix proteins generate complexes that bind specifically to a common DNA sequence." *Cell* **58**: 537-544.
- Nüsslein-Volhard, C., E. Wieschaus and H. Kluding (1984). "Mutations affecting the pattern of the larval cuticle in *Drosophila melanogaster*. I. Zygotic loci on the second chromosome." *Wilhelm Roux's Arch. Dev. Biol.* **193**: 267-282.
- Otting, G., Y. Qian, M. Billeter, M. Muller, M. Affolter, W.J. Gehring and K. Wuthrich (1990). "Protein-DNA contacts in the structure of a homeodomain-DNA complex determined by nuclear magnetic resonance spectroscopy in solution." *EMBO J.* **9**: 3085-3092.
- Patel, N.H. and C.S. Goodman (1992). Whole mount *in situ* hybridisation with a nonradioactive probe. Non-radioactive labeling and detection of biomolecules. Berlin, Springer-Verlag. 377-381.

- Patel, N.H., E. Martin-Blanco, K.G. Coleman, S.J. Poole, M.C. Ellis, T.B. Kornberg and C.S. Goodman (1989). "Expression of *engrailed* proteins in arthropods, annelids, and chordates." *Cell* **58**: 955-968.
- Pellerin, I., C. Schnabel, K.M. Catron and C. Abate (1994). "Hox proteins have different affinities for a consensus DNA site that correlate with the positions of their genes on the hox cluster." *Mol. Cell. Biol.* **14**: 4532-4545.
- Percival-Smith, A., M. Muller, M. Affolter and W.J. Gehring (1990). "The interaction with DNA of wild-type and mutant *fushi tarazu* homeodomains." *EMBO J.* **9**: 3967-3974.
- Peterson, C.L. and I. Herskowitz (1992). "Characterization of the yeast *SWI1*, *SWI2* and *SWI3* genes, which encode a global activator of transcription." *Cell* **68**: 573-583.
- Ptashne, M. (1992). A Genetic Switch. Cambridge, Blackwell and Cell Press.
- Reuter, R. (1994). "The gene *serpent* has homeotic properties and specifies endoderm versus ectoderm within the *Drosophila* gut." *Development* **120**: 1123-1135.
- Reznikoff, W.S. and J.N. Abelson (1978). The *lac* promoter. The Operon. Cold Spring Harbour Laboratory. 221-243.
- Rost, B. and C. Sandler (1994). "Combining evolutionary information and neural networks to predict secondary structure." *Proteins* **19**: 55-72.
- Sanchez-Herrero, E., I. Vernos, R. Marco and G. Morata (1985). "Genetic organisation of the *Drosophila* bithorax complex." *Nature* **313**: 108-113.
- Sanger, F., S. Nicklen and A.R. Coulson (1977). "DNA sequencing with chain-terminating inhibitors." *Proc. Natl. Acad. Sci. (USA)* **74**: 5463-5467.
- Schier, A.F. and W.J. Gehring (1993). "Analysis of a *fushi tarazu* autoregulatory element: multiple sequence elements contribute to enhancer activity." *EMBO J.* **12**: 1111-1119.
- Schneuwly, S., R. Klemenz and W.J. Gehring (1987). "Redesigning the body plan of *drosophila* by ectopic expression of the homeotic gene *Antennapedia*." *Nature* **325**: 816-818.
- Scott, M.P., J.W. Tamkun and G.W. Hartzell (1989). "The structure and function of the homeodomain." *Biochim Biophys Acta* **989**: 25-48.
- Scott, M.P. and A.J. Wiener (1984). "Structural relationships among genes that control development: sequence homology between the *Antennapedia*, *Ultrabithorax* and *fushi tarazu* loci of *Drosophila*." *Proc. Natl. Acad. Sci. (USA)* **81**: 4115-4119.
- Smith, D.B., Johnson, K.S. (1988). "Single-step purification of polypeptides expressed in *Escherichia coli* as fusions with glutathione S-transferase." *Gene* **67**: 31-40.
- Stief, A., D.M. Winter, W.H. Stratling and A.E. Sippel (1989). "A nuclear DNA attachment element mediates elevated and position independent gene activity." *Nature* **341**: 343-345.

- Strecker, T.R., J.R. Merriam and J.A. Lengyel (1988). "Graded requirement for the zygotic terminal gene, *tailless*, in the brain and tail region of the *Drosophila* embryo." *Development* **102**: 721-734.
- Stultz, C. M., J. V. White and T F Smith (1993). "Structural analysis based on state-space modeling." *Protein Science* **2**: 305-314.
- Sun, B., D.A. Hursch, D. Jackson and P.A. Beachy (1995). "Ultrabithorax protein is necessary but not sufficient for full activation of *decapentaplegic* expression in the visceral mesoderm." *EMBO J.* **14**: 520-535.
- Taguchi, A.K.W. and E.T. Young (1987). "Identification and Characterization of *ADR6*, a gene required for sporulation and for expression of the Alcohol Dehydrogenase II isozyme from *Saccharomyces cerevisiae*." *Genetics* **116**: 523-530.
- Takeuchi, T., Y. Yamazaki, Y. Katoh-Fukui, R. Tsuchiya, S. Kondo, J. Motoyama and T. Higashinakagawa (1995). "Gene trap capture of a novel mouse gene, *jumonji*, required for neural tube formation." *Genes & Dev.* **9**: 1211-1222.
- Tamkun, J.W., R. Deuring, M.P. Scott, M. Kissinger, A.M. Pattatucci, T.C. Kaufman and J.A. Kennison (1992). "*brahma*: a regulator of *Drosophila* homeotic genes structurally related to the yeast transcriptional activator SNF2/SWI2." *Cell* **68**: 561-572.
- Treich, I., B.R. Cairns, T. De Los Santos, E. Brewster and M. Carlson (1995). "SNF11, a new component of the yeast SNF-SWI complex that interacts with a conserved region of SNF2." *Mol. Cell. Biol.* **15**: 4240-4248.
- Tsai, S.Y., M.-J. Tsai and B.W. O'Malley (1989). "Cooperative binding of steroid hormone receptors contributes to transcriptional synergism at target enhancer elements." *Cell* **57**: 443-448.
- van Dijk, M.A. and C. Murre (1994). "*extradenticle* raises the DNA binding specificity of homeotic selector gene products." *Cell* **78**: 617-624.
- Vargawisz, P.D. and P.B. Becker (1995). "Transcription factor-mediated chromatin remodeling - mechanisms and models." *FEBS Letters* **369**: 118-121.
- Verrijzer, C.P., M.J. Alkema, W.W. van Weperen, H.C. van Leeuwin, M.J.J. Strating and P.C. van der Vliet (1992). "The DNA binding specificity of the bipartite POU domain and its subdomains." *EMBO J.* **11**: 4993-5003.
- Vincent, J.-P., J.A. Kassis and P.H. O'Farrell (1990). "A synthetic homeodomain binding site acts as a cell type specific, promoter specific enhancer in *Drosophila* embryos." *EMBO J.* **9**: 2573-2578.
- von Hippel, P.H., A. Revzin, C.A. Gross and A.C. Wang (1974). "Nonspecific DNA binding of genome regulating proteins as a biological control mechanism: 1. The *lac* operon: Equilibrium aspects." *Proc. Natl. Acad. Sci. (USA)* **71**: 4808-4812.
- Wakimoto, B.T. and T.C. Kaufman (1981). "Analysis of larval segmentation in lethal genotypes associated with the Antennapedia gene complex in *Drosophila melanogaster*." *Developmental Biology* **81**: 51-65.
- Walter, J., C.A. Dever and M.D. Biggin (1994). "Two homeo domain proteins bind with similar specificity to a wide range of DNA sites in *Drosophila* embryos." *Genes & Dev.* **8**: 1678-1692.

- Wharton, K.A., B. Yedvobnick, V.G. Finnerty and S. Artavanis-Tsakonas (1985). "opa: a novel family of transcribed repeats shared by the Notch locus and other developmentally regulated loci in *Drosophila melanogaster*." *Cell* **40**: 55-62.
- Whitson, R.H., T.H. Huang, B.W. Merrills, T. Asai and K. Itakura "Submitted for publication."
- Wiegel, D., G. Jurgens, M. Klingler and H. Jackle (1990). "Two gap genes mediate terminal pattern information in *Drosophila*." *Science* **248**: 495-498.
- Wilson, D., G. Sheng, T. Lecuit, N. Dostatni and C. Desplan (1993). "Cooperative dimerization of paired class homeo domains on DNA." *Genes & Development* **7**: 2120-2134.
- Wolberger, C., A.K. Vershon, B. Liu, A.D. Johnson and C.O. Pabo (1991). "Crystal structure of a Mat a2 homeodomain-operator complex suggests a general model for homeodomain-DNA interactions." *Cell* **67**: 517-528.
- Wu, J., J. Ellison, E. Salido, P. Yen, T. Mohandas and L.J. Shapiro (1994). "Isolation and characterization of XE169, a novel human gene that escapes X-inactivation." *Human Molecular Genetics* **3**: 153-160.
- Xiao, H., O. Perisic and J.T. Lis (1991). "Cooperative binding of *Drosophila* heat shock factor to arrays of a conserved 5bp unit." *Cell* **64**: 585-593.
- Yoshinaga, S.K., C.L. Peterson, I. Herskowitz and K.R. Yamamoto (1992). "Roles of SWI1, SWI2, and SWI3 proteins for transcriptional enhancement by steroid receptors." *Science* **258**: 1598-1604.
- Young, R. and R. Davis (1983). "The efficient isolation of genes by using antibody probes." *Proc. Natl. Acad. Sci. (USA)* **80**: 1194-1198.
- Yuh, C.-H., A. Ransick, P. Martinez, R.J. Britten and E.H. Davidson (1994). "Complexity and organisation of DNA-protein interactions in the cis-regulatory region of an endoderm specific marker gene in the sea urchin embryo." *Mech. Develop.* **47**: 165-186.
- Zappavigna, V., D. Sartori and F. Mavilio (1994). "Specificity of HOX protein function depends on DNA-protein and protein-protein interactions, both mediated by the homeo domain." *Genes & Dev.* **8**: 732-744.
- Zeng, C., J. Pinsonneault, G. Gellon, N. McGinnis and W.M. Ginis (1994). "Deformed protein binding sites and cofactor binding sites are required for the function of a small segment-specific regulatory element in *Drosophila* embryos." *EMBO J.* **13**: 2362-2377.
- Zeng, W., D.J. Andrew, L.D. Mathies, M.A. Horner and M.P. Scott (1993). "Ectopic expression and function of the *Antp* and *Scr* homeotic genes: the N-terminus of the homeodomain is critical to functional specificity." *Development* **118**: 339-352.
- Zinn, K., L. McAllister and C.S. Goodman (1988). "Sequence analysis and neuronal expression of Fasciclin I in Grasshopper and *Drosophila*." *Cell* **53**: 577-582.