

PATRICK O. BROWN, Ph.D., M.D.

Howard Hughes Medical Institute
and Department of Biochemistry
Stanford University School of Medicine
Stanford CA 94305-5428

Tel: (650) 723-0005
Fax: (650) 725-7811
Email: pbrown@cmgm.stanford.edu
<http://cmgm.stanford.edu/pbrown>
Date of Birth: September 23, 1954

Education

1976 University of Chicago, B.A., with honors
Major: Chemistry
1980 University of Chicago, Ph.D. in Biochemistry
Thesis: Studies on DNA Topoisomerases
Advisor: Nicholas R. Cozzarelli, Ph.D.
1982 University of Chicago, M.D., with honors

Post-Graduate Training and Experience

1982-1985 Pediatrics Residency, Children's Memorial Hospital; Chicago
1987 Diplomate, American Board of Pediatrics.
1985-1988 Postdoctoral fellow, University of California, San Francisco.
Advisors: J. Michael Bishop & Harold E. Varmus.
1988-1994 Assistant Professor, Departments of Pediatrics and
Biochemistry, Stanford University School of Medicine
1988-1997 Assistant Investigator, Howard Hughes Medical Institute.
1990-1999 Associate Editor, Virology
1994-1997 Editorial Board, Journal of Virology.
1995-2000 Associate Professor, Department of Biochemistry,
Stanford University School of Medicine
1997-2002 Associate Investigator, Howard Hughes Medical Institute
1999-present Editorial Board, Genome Biology
2000-present Professor, Department of Biochemistry,
Stanford University School of Medicine
2000-2003 PubMed Central Advisory Committee
2002-present Investigator, Howard Hughes Medical Institute
2002-present Scientific Advisory Board, St. Jude Children's Research Hospital
2002-present Editorial Board, Journal of Biology
2002-present Editorial Board, Proceedings of the National Academy of Sciences
2002-present Founding co-director, Public Library of Science
(www.publiclibraryofscience.org)
2004-present Scientific Advisory Board, Canary Foundation

Awards and Honors

1976-1982	Medical Scientist Training Program scholarship
1980	William Rainey Harper Fellowship
1981	Marc Perry Galler Prize, University of Chicago
1982	Harold Lumpert Research Award, University of Chicago
1982	John Van Prohaska Award, University of Chicago
1985-1988	Lucille P. Markey Scholar
1998	Jacob Heskel Gabbay Award in Biotechnology and Medicine
1999	Fellow, American Association for the Advancement of Science
2000	National Academy of Sciences Award in Molecular Biology
2001	Millennium Award for Genomics Research in Clinical Immunology
2002	Member, National Academy of Sciences
2002	Discover Magazine Innovation Award
2002	Takeda Foundation Award
2003	Helsinki Biotechnology Prize
2003	ASM-Promega Biotechnology Award
2004	Wired Magazine Rave Award
2005	World Technology Award
2005	Scientific American SA50
2005	Curt Stern Award, American Society for Human Genetics
2006	American Cancer Society Medal of Honor

Bibliography

1. Sugino, A., N. P. Higgins, P. O. Brown, C. L. Peebles and N. R. Cozzarelli. 1978. Energy Transduction by DNA Gyrase and the Mechanism of Action of Novobiocin. Proc. Natl. Acad. Sci. USA **75**: 4838-4842.
2. Peebles, C. L., N. P. Higgins, K. N. Kreuzer, A. Morrison, P. O. Brown, A. Sugino and N. R. Cozzarelli. 1978. Structure and Activities of DNA Gyrase. Cold Spring Harbor Symp. Quant. Biol. **43**: 41-57.
3. Brown, P. O., C. L. Peebles and N. R. Cozzarelli. 1979. A Topoisomerase from *Escherichia coli* Related to DNA Gyrase. Proc. Natl. Acad. Sci. USA **76**: 6110-6114.
4. Brown, P. O. and N. R. Cozzarelli. 1979. A Sign Inversion Mechanism for Enzymatic Supercoiling of DNA. Science **206**: 1081-1083.
5. Morrison, A., P. O. Brown, K. N. Kreuzer, R. J. Otter, S. Gerrard and N. R. Cozzarelli. 1980. Mechanisms of DNA Topoisomerases. in Molecular Mechanisms of DNA Replication and Recombination, Academic Press, N.Y., pp. 785-807.
6. Brown, P. O. and N. R. Cozzarelli. 1981. Catenation and Knotting of Duplex DNA by a Type I Topoisomerase - A Mechanistic Parallel with Type II Topoisomerases. Proc. Natl. Acad. Sci. USA **78**: 843-847.
7. Sugino, A., H. Kojo, B. D. Greenberg, P. O. Brown and K. C. Kim. 1981. In Vitro Replication of Yeast 2-Micron Plasmid DNA. in The Initiation of DNA Replication, Academic Press, N.Y., pp. 529-553.
8. Brown, P. O., B. Bowerman, H. E. Varmus and J. M. Bishop. 1987. Correct Integration of Retroviral DNA *in Vitro*. Cell **49**: 347-357.
9. Varmus, H. E. and P. O. Brown. 1989. Retroviruses. pp. 53-108 in Mobile DNA, Berg, D. and Howe, M., eds. ASM Press.
10. Brown, P. O., B. Bowerman, H. E. Varmus and J. M. Bishop. 1989. Retroviral Integration: Structure of the Initial Product and Its Precursor and a Role for the Viral IN Protein. Proc. Natl. Acad. Sci. USA **86**: 2525-2529.
11. Bowerman, B., P. O. Brown, J. M. Bishop and H. E. Varmus. 1989. A Nucleoprotein Complex Mediates the Integration of Retroviral DNA. Genes and Development **3**: 469-478.
12. Brown, P. O. 1990. Retroviral Integration. Current Topics in Microbiology and Immunology **157**: 19-47.
13. Ellison, V., H. Abrams, T. Roe, J. Lifson and P. O. Brown. 1990. Human immunodeficiency virus integration in a cell-free system. J. Virol. **64**: 2711-2715.
14. Vincent, K., D. York-Higgins, M. Quiroga and P. O. Brown. 1990. Host Sequences Flanking the HIV Provirus. Nucl. Acids Res. **18**: 6045-6047.

15. Chow, S.A, K.A.Vincent , V. Ellison and Brown, P.O. 1992. Reversal of integration and DNA splicing mediated by integrase of human immunodeficiency virus. Science **255**: 723-726.
16. Tsuchihashi, Z. and P.O. Brown. 1992. Sequence requirements for efficient translational frameshifting in the Escherichia coli dnaX gene and the role of an unstable interaction between tRNA^{lys} and an AAG lysine codon. Genes and Development **6**: 511-519.
17. Vincent, K.A., V. Ellison, S.A. Chow and P.O. Brown. 1993. Characterization of HIV-1 integrase expressed in E. coli and analysis of variants with N-terminal mutations. J. Virol. **67**:425-437.
18. Nelson, S., McCusker, J, Sander M., Kee, Y, Modrich, P, and Brown, P.O. 1993. Genomic mismatch scanning: a new approach to genetic linkage mapping. Nature Genetics **4**: 11-18.
19. Roe, T., Reynolds, T.C., Yu, G., and Brown, P.O. 1993. Integration of Murine Leukemia Virus DNA depends upon mitosis. EMBO J. **12**: 2099-2108.
20. Siegmund, D., Brown, P.O. and Feingold, E. 1993. Gaussian models for linkage analysis using complete high resolution maps of identity by descent. Am. J. Hum. Genet. **53**:234-251.
21. Chow, S. and Brown P.O. 1994. Substrate features important for recognition and catalysis by human immunodeficiency virus-1 integrase identified using novel DNA substrates. J. Virol. **68**:3896-3907.
22. Brown, P.O. 1994. Genome Scanning Methods. Current Opinion in Genetics and Development. **3**: 366-373.
23. Ellison, V. and Brown, P.O. 1994. A stable complex between integrase and viral DNA mediates HIV integration *in vitro*. Proc. Natl. Acad. Sci. USA. **91**: 7316-7320.
24. Tsuchihashi, Z. and Brown, P.O. 1994. DNA strand exchange and selective DNA annealing promoted by HIV-1 nucleocapsid protein. J. Virol. **68**: 5863-5870.
25. Chow, S.A. and Brown, P.O. 1994. Juxtaposition of two viral DNA ends in a bimolecular disintegration reaction mediated by human immunodeficiency virus-1 or murine leukemia virus integrase. J. Virol. **68** :7869-7878.
26. Kubalek, E., LeGrice, S. and Brown, P.O. 1994. 2-dimensional crystallization of histidine-tagged HIV-1 reverse transcriptase promoted by a novel Nickel-chelating lipid. J. Structural Biology **113**:117-123.
27. Dotan, I., Scottoline, B., Heuer, T. and Brown, P.O. 1995. Characterisation of recombinant murine leukemia virus integrase. J. Virol. **69**:456-468.
28. Ellison, V., Gerton, J., Vincent, K. and Brown, P.O. 1995. An essential interaction between distinct domains of HIV-1 integrase mediates assembly of the active multimer. J. Biol. Chem. **270**:3320-3326.

29. Dupius, J, Brown, P.O., and Siegmund, D. 1995. Statistical methods for linkage analysis of complex traits from high-resolution maps of identity by descent. Genetics **143**: 843-856.
30. Smith, V., Botstein, D, and Brown, P.O. 1995. Genetic footprinting: A genomic strategy for determining a gene's function given its sequence. Proc. Natl. Acad. Sci. USA. **92**:6479-6483.
31. Schena, M., Shalon D., Davis, R. and Brown P.O. Quantitative monitoring of gene expression patterns with a cDNA microarray. 1995. Science **270**:467-470.
32. Nilsen, BM, Haugan, IR, Berg, K, Olsen, L, Brown PO and Helland, DE. 1996. Monoclonal antibodies against HIV-1 integrase: epitope mapping and effects on integrase activities in vitro. J. Virol **70**: 1580-1587.
33. Shalon, D., Smith, S. J. and Brown, P.O. 1996. A DNA micro-array system for analyzing complex DNA samples using two-color fluorescent probe hybridization. Genome Research **6**: 639-645.
34. Schena, M, Shalon, D., Heller, R., Chai, A, Brown, P.O. and Davis, R.W. 1996. Accelerated human genome analysis: microarray-based expression monitoring of 1000 genes. Proc. Natl. Acad. Sci. USA. **93**: 10614-10619.
35. Smith, V., Chou, K., Lashkari, D., Botstein, D. and Brown, P.O. 1996. Functional analysis of the genes of yeast Chromosome V by genetic footprinting. Science **274**:2069-2074.
36. DeRisi, J., Penland, L. and Brown P.O./ Bittner, M., Meltzer, P.S., Ray M., Chen, Y., Su, Y.A., and Trent, J.M. 1996. Use of a cDNA microarray to study gene expression patterns in a human cancer. Nature Genetics **14**:457-461.
37. Roe, T., Chow, S.A., and Brown, P.O. 1997. *In vivo* kinetics of 3' end processing and 5' end joining, two essential steps in retroviral integration. J. Virol.**71**:1334-1340.
38. Singh, I, Crowley, R., and Brown, P.O. 1997. High-resolution functional mapping of a cloned gene by genetic footprinting. Proc. Natl. Acad. Sci. USA.**94**:1304-1309.
39. Scottoline, B.P., Chow, S., Ellison, V., and Brown, P. O. 1997. Disruption of the terminal basepairs of retroviral DNA during integration. Genes and Development **11**:371-382.
40. Heuer, T.S. and Brown, P.O. 1997. Mapping features of HIV-1 integrase near selected sites on viral and target DNA molecules in an active enzyme-DNA complex by photo-crosslinking. Biochemistry **36**: 10655-10665.
41. Brown, P.O. Integration. in Retroviruses. 1997. Coffin, J.M., Hughes, S.H., Varmus, H.E., eds. Cold Spring Harbor Press, N.Y. pp. 161-204.
42. Trent, J.M., Bittner, M., Zhang, J., Wiltshire, R., Ray, M., Su, Y., Gracia, E., Meltzer, P., DeRisi, J., Penland, L. and Brown, P.O. 1997. Use of microgenomic technology for analysis of alterations in DNA copy number and gene expression in malignant melanoma. Clin. Exp. Immunol. **107**:33-40.

43. Gerton, J. and Brown, P.O. 1997 The core domain of HIV-1 integrase recognizes key features of its DNA substrates. J. Biol. Chem. **272**: 25809-25815.
44. DeRisi, J.L., Iyer, V. and Brown, P.O. 1997. Exploring the metabolic and genetic control of gene expression on a genomic scale. Science **278**: 680-686.
45. Lashkari, D.A., DeRisi, J.L., McCusker, J.H., Namath, A.F., Gentile, C., Hwang, S., Brown, P.O. and Davis, R.W. 1997. Yeast genome microarrays for parallel genetic and gene expression analysis of the yeast genome. Proc. Natl. Acad. Sci. USA. **94**:13057-13062.
46. McAllister, L., Penland, L., and Brown, P.O. 1998. Enrichment for loci identical-by-descent between pairs of mouse or human genomes by genomic mismatch scanning. Genomics **47**: 7-11.
47. Brown, P.O. and Hartwell, L. 1998. Genomics and human disease - variations on variation. Nature Genetics **18**:91-93.
48. Gerton, J., Olsen, M., Morris, S. and Brown, P.O. 1998. Effects of mutations in residues near the active site of HIV-1 integrase on specific enzyme-substrate interactions. J. Virology **72**: 5046-5055.
49. Heuer, T.S. and Brown, P.O. 1998. Photo-crosslinking studies suggest a model for the architecture of an active HIV-1 integrase-DNA complex. Biochemistry **37**: 6667-6678.
50. Yeager, M., Wilson-Kubalek, E. M., Weiner, S. G., Brown, P.O. and Rein, A. 1998. Supramolecular organization of immature and mature murine leukemia virus revealed by electron cryo-microscopy: implications for retroviral assembly mechanisms. Proc. Natl. Acad. Sci. USA. **95**: 7299-7304.
51. Ferea, T., Dunn, B., Botstein, D. and Brown, P.O. 1998. Genetic footprinting and functional maps of the yeast genome, In PCR Methods Manual, ed. M. Innis editor, Academic Press.
52. Sutton, R.E., Wu, H., Rigg, R., Boehnlein, E. and Brown, P.O. 1998. Human immunodeficiency virus type 1 vectors efficiently transduce human hematopoietic stem cells. J. Virology **72**:5781-5788.
53. Alizadeh, A, Eisen, M., Brown, P.O. and Staudt, L.M. 1998. Probing lymphocyte biology by genomic-scale gene expression analysis. Journal of Clinical Immunology **18**: 373-379.
54. Lutfiyya L.L., Iyer V.R., Derisi J., Brown P.O. and Johnston, M. 1998. Characterisation of three related glucose repressors and genes they regulate in *S. cerevisiae*. Genetics **150**: 1377-1391.
55. Chu, S., Derisi, J., Eisen, M., Mulholland, J., Botstein, D., Brown, P.O. and Herskowitz, I. 1998. The transcriptional program of germ cell development in budding yeast. Science **282**:699-705.
56. Marton, M.J., Derisi, J.L., Bennett, H., Iyer, V., Meyer, M., Roberts, C., Stoughton, R., Burchard, J., Slade, D., Bassett, D., Hartwell, L.H., Brown, P.O. and Friend, S.H.

1998. Drug target validation and identification of secondary drug target effects using DNA microarrays. Nature Medicine **4**:1293-1301.
57. Eisen, M., Spellman, P., Brown, P.O and Botstein, D. 1998. Cluster analysis and display of genome-wide expression patterns. Proc. Natl. Acad. Sci. USA **95**: 14863-14868.
58. Spellman, P.T., Sherlock, G., Iyer, V.R., Eisen, M.B., Zhang, M., Brown, P.O, Botstein, D. and Futcher, B. 1998. Comprehensive identification of cell-cycle regulated genes in *Saccharomyces cerevisiae*. Molecular Biology of the Cell **9**: 3273-3297.
59. Iyer, V.R., Eisen, M.B., Ross, D.R., Lashkari, D., Moore, T., Schuler, G., Lee, J., Boguski, M., Hudson, J., Shalon, D., Botstein, D. and Brown, P.O. 1999. The transcriptional program in the response of human fibroblasts to serum. Science **283**: 83-87.
60. Brown, P.O., and Botstein D. 1999. Exploring the New World of the genome with DNA microarrays. Nature Genetics **21**:33-37.
61. Myers, L.C., Gustafsson, C.M., Hayashibara, K.C., Brown, P.O. and Kornberg, R.D. 1999. Mediator protein mutations that selectively abolish activated transcription. Proc. Natl. Acad. Sci. USA **96**: 67-72.
62. Sutton, R.E., Reitsma, M.J., Uchida, N. and Brown, P.O. 1999. Transduction of human progenitor hematopoietic stem cells by human immunodeficiency virus type 1-based vectors is cell-cycle dependent. J. Virology **73**: 3649-60.
63. Yang, G.P., Ross, D.T., Kuang, W.W., Brown, P.O. and Weigel, R.J. 1999. Combining SSH and cDNA microarrays for rapid identification of differentially-expressed genes. Nucl. Acids. Res. **27**:1517-23.
64. Pollack, J.R., Perou, C.M., Alizadeh, A., Eisen, M.B., Pergamenschikov, A., Williams, C.F., Jeffrey, S.S., Botstein, D., and Brown, P.O. 1999. Genome-wide analysis of DNA copy number variation using cDNA microarrays. Nature Genetics **23**: 41-46.
65. Eisen, M.B. and Brown, P.O. 1999. cDNA microarrays for analysis of gene expression. In Methods in Enzymology 303: cDNA Preparation and Display; ed. S.M. Weissman. Academic Press.
66. Perou, C.M., Jeffrey, S.S., van de Rijn, M., Eisen, M.B., Ross, D.T., Pergamenschikov, A., Rees, C.A., Williams, C.F., Zhu, S.X., Lee, J.C.F., Lashkari, D., Shalon, D., Brown, P.O and Botstein, D. 1999. Distinctive gene expression patterns in human breast epithelial cells and breast cancer. Proc. Natl. Acad. Sci. U.S.A. **96**: 9212-9217.
67. Ferea, T., Botstein, D., Brown, P.O and Rosenzweig, F. 1999. Systematic changes in gene expression patterns in adaptive evolution in yeast. Proc. Natl. Acad. Sci. U.S.A. **96**: 9721-9726.
68. Wilson, M, DeRisi, J., Kristensen, H.-H., Imboden, P., Rane, S., Brown, P.O and Schoolnik, G.K. 1999. Exploring drug-induced alterations in gene expression in *Mycobacterium tuberculosis* by microarray hybridization. Proc. Natl. Acad. Sci. U.S.A. **96**: 12833-12838.

69. Johannes, G., Carter, M.S., Eisen, M.B., Brown, P.O. and Sarnow, P. 1999. Identification of eukaryotic mRNAs that can be translated in the absence of intact cap binding protein complex eIF4F using a cDNA microarray. Proc. Natl. Acad. Sci. U.S.A. **96**: 13118-13123.
70. Gerton, J., Herschlag, D., and Brown, P.O. 1999. Stereochemistry of reactions catalyzed by HIV-1 integrase. J. Biol. Chem. **274**: 33480-33487.
71. Ferea TL, Brown PO. 1999. Observing the living genome. Curr Opin Genet Dev **6**:715-22.
72. Tibshirani, R., Hastie, T., Eisen, M., Ross, D., Botstein, D. and Brown, P.O. 1999. Clustering methods for the analysis of DNA microarray data. [Technical Report. Department of Statistics, Stanford University].
73. Staudt, L. and Brown, P.O. 2000. Genomic views of the immune system. Annual Reviews of Immunology **18**: 829-859.
74. Hayward, R.E, DeRisi, J.L, Alfadhli, S., Kaslow, D.C., Brown, P.O, and Rathod, P.K. 2000. Shotgun DNA microarrays and stage-specific gene expression in *Plasmodium falciparum*. Molecular Microbiology **35**: 6-14.
75. Ross, D.T., Scherf, U., Eisen, M.B., Perou, C.M., Spellman, P., Iyer, V., Jeffrey, S.S., Waltham, M., Pergamenschikov, A., Lee, J., Lashkari, D., Shalon, D., Myers, T., Weinstein, J.N., Botstein, D. and Brown, P.O. 2000. Systematic variation in gene expression pattern among sixty human cancer cell lines. Nature Genetics **24**: 227-235.
76. Scherf, U., Ross, D.T., Waltham, M., Smith, L.H., Lee, J., Kohn, K.W., Reinhold, W.C., Myers, T., Andrews, D.T., Scudiero, D.A., Eisen, M.B., Sausville, E.A., Pommier, Y., Botstein, D., Brown, P.O. and Weinstein, J.N. 2000. A gene expression database for the molecular pharmacology of cancer. Nature Genetics **24**: 236-244.
77. Laurent, L.C., Olsen, M.N., Crowley, R.A., Savilahti, H. and Brown, P.O. 2000. Functional characterization of the 5' portion of the HIV-1 genome by genetic footprinting. J. Virology **74**: 2760-2769.
78. Sudarsanam, P., Iyer, V., Brown, P.O. and Winston, F. 2000. Whole-genome expression analysis of *snf/swi* mutants of *S. cerevisiae*. Proc. Natl. Acad. Sci. U.S.A. **97**: 3364-3369.
79. Alizadeh, A., Eisen, M.B., Davis, R.E., Ma, C., Rosenwald, A., Sherlock, G., Boldrick, J.C., Sabet, H., Tran, T., Yu, X., Powell, J.I., Yang, L., Marti, G.E., Moore, T., Hudson, J., Chan, W.C., Greiner, T., Weisenberger, D., Tibshirani, R., Armitage, J.O., Lossos, I., Levy, R., Wilson, W., Grever, M., Byrd, J., Botstein, D., Brown, P.O. and Staudt, L. 2000. Identification of clinically distinct types of diffuse large B-cell lymphoma based on gene expression patterns. Nature **403**: 503-511.
80. Alizadeh, A., Eisen, M.B., Davis, R.E., Ma, C, J.C., Sabet, H., Tran, T., Powell, J.I., Yang, L., Marti, G.E., Moore, T., Hudson, J., Chan, W.C., Greiner, T., Weisenberger, D., Armitage, J.O., Lossos, I., Levy, R., Botstein, D., Brown, P.O. and Staudt, L. 2000. The lymphochip: a specialized cDNA microarray for genomic-scale analysis of gene expression in normal and malignant lymphocytes. Cold Spring Harbor Symp. Quant. Biol. **64**:71-78.

81. Zhu, G., Spellman, P.T., Volpe, T. Brown, P.O., Botstein, D., Davis, T.N., and Futcher, B. 2000. Two Yeast Forkhead Genes Regulate the Cell Cycle and Pseudohyphal Growth. Nature **406**: 90-94
82. Diehn, M., Eisen, M.B., Botstein, D. and Brown, P.O. 2000. Large-scale identification of secreted and membrane-associated gene products using DNA microarrays. Nature Genetics **25**:58-62.
83. Derisi, J., van den Hazel, B., Marc, P. Balzi, E., Brown, P.O., Jacq, C., Goffeau, A. 2000. Genome microarray analysis of transcriptional activation in multidrug resistance yeast mutants. Febs Letters **470**: 156-160.
84. Casagrande, R., Stern, P., Diehn, M., Shamu, C., Osario, M., Zuñega, M., Brown, P.O. and Ploegh, H. 2000. Degradation of Proteins from the ER of *S. cerevisiae* Requires an Intact Unfolded Protein Response Pathway. Molecular Cell **5**:729-735.
85. Perou, C.M., Sørlie, T., van de Rijn, M. Jeffrey, S.S., Pollack, J.R., Rees, C.A., Ross, D.T., Eisen, M.B, Johnson, H., Lønning, P.E., Geisler, S., Aas, T., Pergamenschikov, A., Williams, C., Zhu, S.X., Børrenson-Dale, A., Brown, P.O. and Botstein, D. 2000. Molecular portraits of human breast cancer. Nature **406**:747-752.
86. Diehn, M., Alizadeh, A.A. and Brown, P.O. 2000. Genomic pathophysiology: examining the living genome in health and disease with DNA microarrays. JAMA **283**:2298-9
87. Hastie, T., Tibshirani, R., Eisen, M., Alizadeh, A., Levy, R. Staudt, L. Chan, W.C., Botstein, D. and Brown P.O. 'Gene shaving' as a method for identifying distinct sets of genes with similar expression patterns. Genome Biology **1**: 0003.1-0003.21.
88. Lyons, T.J., Gasch, A.P., Gaither, A., Botstein, D., Brown, P.O. and Eide, D.J. 2000. Genome-wide characterization of the Zap1p zinc-responsive regulon in yeast. Proc. Natl. Acad. Sci. U.S.A. **97**: 7957-7962.
89. Yun, C-W., Ferea, T., Rashford, J., Ardon, O., Brown, P.O., Botstein, D., Kaplan, D. Philpott, C.C. 2000. Desferrioxamine-Mediated Iron Uptake in *Saccharomyces cerevisiae*: Evidence for two pathways of iron uptake. J Biol Chem. **275**:10709-15.
90. Khodursky, A., Peter, B.J., Schmidt, M.B., DeRisi, J., Botstein, D., Brown, P.O. and Cozzarelli, N.R. 2000. Microarray analysis of topoisomerase function in bacterial replication. Proc. Natl. Acad. Sci. U.S.A. **97**:9419-24..
91. Lossos, I.S., Alizadeh, A.A., Eisen, M.B., Chan, W.C., Brown, P.O., Botstein, D., Staudt, L.M. and Levy, R. 2000. Ongoing immunoglobulin heavy chain somatic mutation in germinal center B cell-like but not in activated B-cell-like diffuse large cell lymphomas. Proc Natl Acad Sci U S A. **97**: 10209-13.
92. Alter, O., Brown, P.O. and Botstein, D. 2000. Singular value decomposition for genome-wide expression data processing and modeling. Proc. Natl. Acad. Sci. U.S.A. **97**:10101-10106..

93. Gross, C., Kelleher, M., Iyer, V.R., Brown, P.O. and Winge, D.R. 2000. Identification of the copper regulon in *Saccharomyces cerevisiae* using DNA microarrays. J Biol Chem **275**:32310-32316.
94. Ogawa, N., DeRisi, J.L. and Brown, P.O. 2000. DNA microarray analysis of phosphate-regulated gene expression in *Saccharomyces cerevisiae* reveals a genetic system for phosphate accumulation and polyphosphate metabolism. Molecular Biology of the Cell **11**: 4309-4321
95. Khodursky, A., Peter, B.J. Cozzarelli, N.R., Botstein, D., Brown, P.O. and Yanofsky, C. 2000. DNA microarray analysis of gene expression in response to physiological and genetic changes that affect tryptophan metabolism in *Escherichia coli*. Proc. Natl. Acad. Sci. USA **97**:12170-5.
96. Gasch, A.P, Spellman, P.T., Kao, C.M., Carmel-Harel, O., Storz, G., Botstein, D. and Brown, P.O. 2000. Genomic expression programs in the response of *Saccharomyces cerevisiae* to sudden environmental changes. Molecular Biology of the Cell **11**:4241-4257.
97. Gerton JL, DeRisi J, Shroff R, Lichten M, Brown PO, Petes TD. 2000. Global mapping of meiotic recombination hotspots and coldspots in the yeast *Saccharomyces cerevisiae*. Proc Natl Acad Sci U S A. **97**:11383-90.
98. Perou, CM, Brown, P.O. and Botstein, D. 2000. Tumor classification using gene expression patterns from DNA microarrays. In New Technologies for Life Sciences: A Trends Guide. Elsevier Science, London. pp. 67-76.
99. Reid JL, Iyer VR, Brown PO, Struhl K. 2000. Coordinate Regulation of Yeast Ribosomal Protein Genes Is Associated with Targeted Recruitment of Esa1 Histone Acetylase. Mol Cell. **6**:1297-1307.
100. Lee SE, Pelliccioli A, Demeter J, Vaze MP, Gasch AP, Malkova A, Brown PO, Botstein D, Stearns T, Foiani M, Haber JE. 2000. Arrest, adaptation, and recovery following a chromosome double-strand break in *Saccharomyces cerevisiae*. Cold Spring Harb Symp Quant Biol. **65**:303-14
101. Haab, B., Dunham, M. and Brown P.O. 2001. Protein microarrays for highly-parallel detection and quantitation of proteins and antibodies in complex solutions Genome Biology **2**: 0004.1-0004.13.
102. Iyer, V., Horack, C., Scafe, C., Botstein, D., Snyder, M. and Brown, P.O. 2001. Genomic binding sites of the yeast cell-cycle transcription factors SBF and MBF. Nature **409**:533-538.
103. Courcelle, J., Khodursky, A., Peter, P., Brown, P.O. and Hanawalt, P. 2001. Comparative gene expression profiles following UV exposure in wild type and SOS deficient *Escherichia coli*. Genetics **158**:41-64.
104. Renne R, Barry C, Dittmer D, Compitello N, Brown PO, Ganem D. 2001. Modulation of cellular and viral gene expression by the latency-associated nuclear antigen of Kaposi's sarcoma-associated herpesvirus. J Virol. **75**:458-68.
105. Kuhn KM, DeRisi JL, Brown PO, Sarnow P. 2001. Global and Specific Translational Regulation in the Genomic Response of *Saccharomyces cerevisiae* to a

- Rapid Transfer from a Fermentable to a Nonfermentable Carbon Source. Mol Cell Biol. **21**:916-927.
106. Sherlock G, Hernandez-Boussard T, Kasarskis A, Binkley G, Matese JC, Dwight SS, Kaloper M, Weng S, Jin H, Ball CA, Eisen MB, Spellman PT, Brown PO, Botstein D, Cherry JM. 2001. The Stanford microarray database. Nucleic Acids Res. **29**:152-5.
 107. Hastie, T., Tibshirani, R., Botstein, D., Brown, P.O. 2001. Supervised harvesting of expression trees. Genome Biology **2**: 0003.1-0003.12.
 108. Carmel-Harel O, Stearman R, Gasch AP, Botstein D, Brown PO, Storz G. 2001. Role of thioredoxin reductase in the Yap1p-dependent response to oxidative stress in *Saccharomyces cerevisiae*. Mol Microbiol. **39**:595-605.
 109. Roberts RJ, Varmus HE, Ashburner M, Brown PO, Eisen MB, Khosla C, Kirschner M, Nusse R, Scott M, Wold B. 2001. Building a "GenBank" of the published literature. Science. **291**:2318-9.
 110. Miki R, Kadota K, Bono H, Mizuno Y, Tomaru Y, Carninci P, Itoh M, Shibata K, Kawai J, Konno H, Watanabe S, Sato K, Tokusumi Y, Kikuchi N, Ishii Y, Hamaguchi Y, Nishizuka I, Goto H, Nitanda H, Satomi S, Yoshiki A, Kusakabe M, DeRisi JL, Eisen MB, Iyer VR, Brown PO, Muramatsu M, Shimada H, Okazaki Y, Hayashizaki Y. 2001. Delineating developmental and metabolic pathways in vivo by expression profiling using the RIKEN set of 18,816 full-length enriched mouse cDNA arrays. Proc Natl Acad Sci U S A. **98**:2199-2204.
 111. Li S, Ross DT, Kadin ME, Brown PO, Wasik MA. 2001. Comparative genome-scale analysis of gene expression profiles in T cell lymphoma cells during malignant progression using a complementary DNA microarray. Am J Pathol. **158**:1231-7.
 112. Troyanskaya O, Cantor M, Sherlock G, Brown P, Hastie T, Tibshirani R, Botstein D, Altman RB. 2001. Missing value estimation methods for DNA microarrays. Bioinformatics. **17**:520-5.
 113. Lieb JD, Liu X, Botstein D and Brown PO. 2001. Promoter-specific binding of Rap1 revealed by genome-wide maps of protein-DNA association. Nature Genetics **28**:327-34.
 114. Liu R, Liu H, Chen X, Kirby M, Brown PO, Zhao K. 2001. Regulation of csf1 promoter by the swi/snf-like baf complex. Cell **106**:309-18.
 115. Frueh FW, Hayashibara KC, Brown PO, Whitlock JP. 2001. Use of cDNA microarrays to analyze dioxin-induced changes in human liver gene expression. Toxicol Lett. **122**:189-203.
 116. Chiang DY, Brown PO, Eisen MB. 2001. Visualizing associations between genome sequences and gene expression data using genome-mean expression profiles. Bioinformatics. **17** Suppl 1:S49-S55.
 117. Sorlie T, Perou CM, Tibshirani R, Aas T, Geisler S, Johnsen H, Hastie T, Eisen MB, van de Rijn M, Jeffrey SS, Thorsen T, Quist H, Matese JC, Brown PO, Botstein D, Lonning PE, Borresen-Dale A-L. 2001. Gene expression patterns in breast carcinomas

distinguish tumor subclasses with clinical implications. Proc Natl Acad Sci U S A. **98**:10869-74.

118. Lonning PE, Sorlie T, Perou CM, Brown PO, Botstein D, Borresen-Dale AL. 2001. Microarrays in primary breast cancer - lessons from chemotherapy studies. Endocr Relat Cancer. **8**:259-63.
119. Finlin BS, Gau G-L, Murphy GA, Shao H, Kimel T, Seitz RS, Chiu Y-F, Botstein D, Brown PO, Der CJ, Tamanoi T, Andres DA, and Perou CM. 2001. Rerg is a novel ras-related, estrogen-regulated and growth-inhibitory gene in breast cancer. J. Biol. Chem. **276**:42259-67
120. Rosenwald A, Alizadeh AA, Widhopf G, Simon R, Davis RE, Yu X, Yang L, Pickeral OK, Rassenti LZ, Powell J, Botstein D, Byrd JC, Grever MR, Cheson BD, Chiorazzi N, Wilson WH, Kipps TJ, Brown PO, Staudt LM. 2001. Relation of gene expression phenotype to immunoglobulin mutation genotype in B-cell chronic lymphocytic leukemia. J. Exp. Med. **194**:1639-47.
121. Garber M, Troyanskaya OG, Schluens K, Petersen S, Thaesler Z, Pacyna-Gengelbach M, van de Rijn M, Rosen GD, Whyte RI, Altman RB, Brown PO, Botstein D, Petersen I. 2001. Diversity of gene expression in adenocarcinoma of the lung. Proc. Natl. Acad. Sci. USA **98**:13784-9.
122. Keller G, Ray E, Brown PO, Winge DR. 2001. Haa1, a protein homologous to the copper-regulated transcription factor ace1, is a novel transcriptional activator. J Biol Chem. **276**:38697-702.
123. Protchenko O, Ferea T, Rashford J, Tiedeman J, Brown PO, Botstein D, Philpott CC. 2001. Three cell wall mannoproteins facilitate the uptake of iron in *Saccharomyces cerevisiae*. J Biol Chem. **276**:49244-50.
124. Rutherford JC, Jaron S, Ray E, Brown PO, Winge DR. 2001. A second iron-regulatory system in yeast independent of Aft1p. Proc Natl Acad Sci U S A. **98**:14322-7.
125. Gasch AP, Huang M, Metzner S, Botstein D, Elledge SJ, Brown, PO. 2001. Genomic expression responses to DNA-damaging agents, and the regulatory role of the yeast ATR homolog Mec1p. Molecular Biology of the Cell **12**:2987-3003.
126. Rothenberg SM, Olsen M, Laurent L, Crowley RA and Brown PO. 2001. Comprehensive Mutational Analysis of the Moloney Murine Leukemia Virus Envelope Protein. J. Virology **75**:11851-62.
127. Tibshirani R, Hastie T, Narasimhan B, Eisen M, Sherlock G, Brown PO, Botstein D. 2002. Exploratory screening of genes and clusters from microarray experiments. Statistica Sinica **12**:47-60.
128. Boldrick JC, Alizadeh AA, Diehn M, Dudoit S, Liu CL, Belcher CE, Botstein D, Staudt LM, Brown PO, and Relman DA. 2002. Stereotyped and specific gene expression programs in human innate immune responses to bacteria. Proc Natl Acad Sci U S A **99**: 972-977.

129. Clement K, Viguerie N, Diehn M, Alizadeh A, Barbe P, Thalamas C, Storey JD, Brown PO, Barsh GS, Langin D. 2002. In vivo regulation of human skeletal muscle gene expression by thyroid hormone. Genome Res. **12**:281-291.
130. Nielsen TO, West RB, Linn SC, Alter O, Knowling MA, O'Connell JX, Zhu S, Fero M, Sherlock G, Pollack JR, Brown PO, Botstein D and van de Rijn M. 2002. Molecular Portraits of Soft Tissue Tumors. Lancet **359**:1301-7..
131. Robinson WH, DiGennaro C, Hueber W, Haab B, Kamachi M, Dean EJ, Fournel S, Fong D, Genovese MC, de Vegvar HEN, Skriner K, Hirschberg DL, Morris RI, Muller S, Pruijn GJ, van Venrooij WJ, Smolen JS, Brown PO, Steinman L, Utz PJ. 2002. Autoantigen microarrays for multiplex characterization of autoantibody responses. Nature Medicine **8**: 295-301.
132. Whitfield ML, Sherlock G, Saldanha A, Murray JI, Ball CA, Alexander KE, Perou CM, Hurt MM, Brown PO, Botstein D. 2002. Genes periodically expressed in the human cell cycle and their expression in tumors. Molecular Biology of the Cell **13**: 1977-2000.
133. Chen X, Cheung ST, So S, Fan ST, Barry C, Higgins J, Lai K-M, Ji J, Dudoit S, Ng IOL, van de Rijn M, Botstein D, Brown PO. 2002. Gene expression patterns in human liver cancers. Molecular Biology of the Cell **13**: 1929-1939.
134. Wang, Y, Liu C-L, Storey JD, Tibshirani RJ, Herschlag D, Brown PO. 2002. Precision and functional specificity in mRNA decay. Proc Natl Acad Sci U S A **99**:5860-5865.
135. Lin JY, Pollack JR, Chou F-L, Rees CA, Brown PO, Ginsberg MH. 2002. Physical Mapping of Genes in Somatic Cell Radiation Hybrids by Comparative Genomic Hybridization to cDNA Microarrays. Genome Biology **3**: RESEARCH0026.
136. Sayama K, Diehn M,, Matsuda K, Lunderius C, Tsai M, Tam S-Y, Botstein D, Brown PO, Galli SJ. 2002. Transcriptional Response of Human Mast Cells Stimulated via the Fc-epsilon RI and Identification of Mast Cells as a Source of IL-11. BMC Immunology **3**:5.
137. Lossos IS, Alizadeh AA, Diehn M, Warnke R, Thorstenson Y, Oefner PJ, Brown PO, Botstein D, Levy R. 2002. Transformation of follicular lymphoma to diffuse large-cell lymphoma: Alternative patterns with increased or decreased expression of c-myc and its regulated genes. Proc Natl Acad Sci U S A. **99**:8886-91.
138. Diehn M, Alizadeh AA, Rando OJ, Liu CL, Stankunas K, Botstein D, Crabtree GR, Brown PO. 2002. Genomic expression programs and the integration of the CD28 costimulatory signal in T-cell activation. Proc Natl Acad Sci U S A **99**:11796-801.
139. Yoshimoto H, Saltsman K, Gasch AP, Li HX, Ogawa N, Botstein D, Brown PO, Cyert MS. 2002. Genome-wide analysis of gene expression regulated by the calcineurin/Crz1p signaling pathway in *Saccharomyces cerevisiae*. J Biol Chem. **277**:31079-88.
140. Willert J, Epping M, Pollack JR, Brown PO, Nusse R. 2002. A Transcriptional Response to Wnt protein in human embryonic carcinoma cells. BMC Developmental Biology **2**:8.

141. Pollack JR, Sorlie T, Perou CM, Rees CA, Jeffrey SS, Lonning PE, Tibshirani R, Botstein D, Borresen-Dale A, Brown PO. 2002. Microarray analysis reveals a major direct role of DNA copy number alteration in the transcriptional program of human breast tumors. Proc Natl Acad Sci U S A **99**: 12963-8.
142. DePrimo SE, Diehn M, Nelson JB, Reiter RE, Matese J, Fero M, Tibshirani R, Brown PO, Brooks JD. 2002. Transcriptional programs activated by exposure of human prostate cancer cells to androgen. Genome Biol. **3**(7):RESEARCH0032.
143. Chang HY, Chi J-T, Dudoit S, Bondre C, van de Rijn M, Botstein D, Brown PO. 2002. Diversity, topographic differentiation, and positional memory of human fibroblasts. Proc. Natl. Acad. Sci. USA **99**: 12877-82.
144. Tani TH, Khodursky A, Blumenthal RM, Brown PO, Matthews RG. 2002. Adaptation to famine: a family of stationary phase genes revealed by microarray analysis. Proc. Natl. Acad. Sci. USA **99**: 13471-13476.
145. Troyonskaya OG, Garber ME, Brown PO, Botstein D, Altman RB. Nonparametric methods for identifying differentially expressed genes in microarray data. Bioinformatics **18**: 1454-1461.
146. van de Rijn M, Perou CM, Tibshirani R, Haas P, Kallioniemi O, Kononen J, Torhorst J, Sauter G, Zuber M, Kochli OR, Mross F, Dieterich H, Seitz R, Ross D, Botstein D, Brown PO. 2002. Expression of cytokeratins 17 and 5 identifies a group of breast carcinomas with poor clinical outcome. Am J Pathol. **161**:1991-6.
147. Dunham MJ, Badrane H, Ferea T, Adams J, Brown PO, Rosenzweig F, Botstein D. 2002. Characteristic genome rearrangements in experimental evolution of *S. cerevisiae*. Proc. Natl. Acad. Sci. USA **99**:16144-16149.
148. Leung SY, Chen X, Chu KM, Yuen ST, Mathy J, Ji J, Chan ASY, Law S, Troyanskaya OG, Tu I-P, Wong J, So S, Botstein S, Brown PO. 2002. Phospholipase A2, Group IIA expression in gastric adenocarcinoma is associated with prolonged survival and less frequent metastasis. Proc. Natl. Acad. Sci. USA **99**: 16203-16208.
149. Baldwin DA, Vanchinathan V, Brown PO, Theriot JA. 2002. A gene-expression program reflecting the innate immune response of cultured intestinal epithelial cells to infection by *Listeria monocytogenes*. Genome Biology, **4**: R2.
150. Gollub J, Ball C, Binkley G, Demeter J, Hebert G, Hernandez-Boussard T, Jin H, Kaloper M, Matese J, Schroeder M, Brown PO, Botstein D, Sherlock G. 2003. The Stanford Microarray Database: Data access and quality assessment tools. Nucl. Acids Res. **31**: 94-96.
151. Diehn M, Binkley G, Jin H, Matese JC, Hernandez-Boussard T, Rees CA, Cherry JM, Sherlock G, Botstein D, Brown PO, Alizadeh AA. 2003. SOURCE: A Unified Genomic Resource of Functional Annotations, Ontologies, and Gene Expression Data. Nucl. Acids Res. **31**: 219-223.
152. Whitney A, Diehn M, Popper SJ, Alizadeh AA, Boldrick JC, Relman DA, Brown PO. 2003. Individuality and variation in gene expression patterns in human blood. Proc. Natl. Acad. Sci. USA **100**: 1896-1901.

153. Bohen SP, Troyanskaya OG, Alter O, Warnke R, Botstein D, Brown PO, and Levy R. 2003. Variation in gene expression patterns in follicular lymphoma and the response to Rituximab. Proc. Natl. Acad. Sci. USA **100**: 1926-1930.
154. Alter O, Brown PO, Botstein D. 2003. Generalized singular value decomposition for comparative analysis of genome-scale expression data sets of two different organisms. Proc. Natl. Acad. Sci. USA **100**: 3351-3356.
155. Iacobuzio-Donahue CA, Maitra A, Olsen M, Lowe AW, van Heek NT, Rosty C, Walter K, Sato N, Parker A, Ashfaq R, Jaffee E, Ryu B, Jones J, Eschleman JR, Yeo CJ, Cameron JL, Kern SE, Hruban RH, Brown PO, Goggins M. 2003. Exploration of global gene expression patterns in pancreatic adenocarcinoma using cDNA microarrays. Am. J. Pathol. **162**: 1151-62.
156. Arava Y, Wang Y, Storey JD, Liu C-L, Brown PO, Herschlag D. 2003. Genome-wide analysis of mRNA translation profiles in *Saccharomyces cerevisiae*. Proc. Natl. Acad. Sci. USA **100**: 3889-3894.
157. Nagy PL, Cleary ML, Brown PO, Lieb JD. 2003. Genome-wide demarcation of RNA polymerase II transcription units revealed by physical fractionation of chromatin. Proc. Natl. Acad. Sci. USA **100**: 6364-9.
158. Chi J-T, Chang HY, Wang NN, Chang DS, Dunphy N, Brown PO. 2003. Genome-wide view of gene silencing by small interfering RNA. Proc. Natl. Acad. Sci. USA **100**: 6343-6.
159. Sørlie T, Tibshirani R, Parker J, Hastie T, Marron JS, Nobel A, Deng S, Johnsen H, Pesich R, Geisler S, Perou CM, Lønning PE, Brown PO, Børresen-Dale A-L, Botstein D. 2003. Repeated observation of breast tumor subtypes in independent gene expression data sets. Proc. Natl. Acad. Sci. USA **100**: 8418-23.
160. Holterhus PM, Hiort O, Demeter J, Brown PO, Brooks JD. 2003. Differential gene-expression patterns in genital fibroblasts of normal males and 46,XY females with androgen insensitivity syndrome: evidence for early programming involving the androgen receptor. Genome Biol. **4**: R37.
161. Schaner M, Ross D, Ciaravino G, Sorlie T, Troyanskaya OG, Diehn M, Wang Y, Duran G, Sikic T, Caldeira S, Skomedal H, Tu IP, Hernandez-Boussard T, Johnson S, O'Dwyer P, Fero M, Kristensen G, Borreson-Dale A-L, Hastie T, Tibshirani R, Van de Rijn M, Teng N, Longacre T, Botstein D, Brown PO, Sikic B. 2003. Gene expression patterns in ovarian carcinomas. Molecular Biology of the Cell **14**:4376-86.
162. Chi J-T, Chang HY, Haraldsen G, Jahnsen FL, Troyanskaya OG, Chang DS, Wang Z, Rockson SG, Botstein D, Brown PO. 2003. Endothelial cell diversity revealed by global expression profiling. Proc. Natl. Acad. Sci. USA **100**:10623-8.
163. Chen X, Leung SY, Yuen ST, Chu K-M, Ji J, Li R, Chan ASY, Law S, Troyanskaya OG, Wong J, So S, Botstein D, Brown PO. 2003 Variation in gene expression patterns in human gastric cancers. Molecular Biology of the Cell **14**:3208-15.
164. Shepard KA, Gerber AP, Jambhekar A, Takizawa PA, Brown PO, Herschlag D, DeRisi JL, Vale RD. 2003. Widespread cytoplasmic mRNA transport: identification of

22 new bud-localized transcripts using DNA microarray analysis. Proc. Natl. Acad. Sci. USA **100**:11429-34.

165. Sperger JM, Chen X, Draper JS, Antosiewicz JE, Chon C, Jones S, Brooks JD, Andrews PW, Brown PO, Thomson JA. 2003. Gene expression patterns in human embryonic stem cells and human pluripotent germ cell tumors. Proc. Natl. Acad. Sci. USA **100**:13350-5.
166. Brown PO, Eisen MB, Varmus HE. 2003. Why PLoS became a publisher. PLoS Biol. **1**:E36.
167. Whitfield ML, Finlay DR, Murray JI, Troyanskaya OG, Chi JT, Pergamenschikov A, McCalmont TH, Brown PO, Botstein D, Connolly MK. 2003. Systemic and cell type-specific gene expression patterns in scleroderma skin. Proc Natl Acad Sci U S A. **100**:12319-24.
168. Linn SC, West RB, Pollack JR, Zhu S, Hernandez-Boussard T, Nielsen TO, Rubin BP, Patel R, Goldblum JR, Siegmund D, Botstein D, Brown PO, Gilks CB, van de Rijn M. 2003. Gene expression patterns and gene copy number changes in dermatofibrosarcoma protuberans. Am J Pathol. **163**:2383-2395.
169. Roose JP, Diehn M, Tomlinson MG, Lin J, Alizadeh AA, Botstein D, Brown PO, Weiss A. 2003. T cell Receptor-Independent Basal Signaling via Erk and Abl Kinases Suppresses *RAG* gene Expression. PLoS Biology **1**:E52.
170. Hurowitz EH, Brown PO. 2003. Genome-wide measurement of RNA transcript lengths in *S. cerevisiae*. Genome Biology **5**:R2.
171. Soen Y, Chen D, Kraft D, Davis M, Brown PO. 2003 Detection and characterization of cellular immune responses using peptide-MHC microarrays. PLoS Biol **1**: 429-438.
172. Higgins JPT, Wang L, Kambham N, Montgomery K, Mason V, Vogelmann S, Lemley K, Brown PO, Brooks JD, van de Rijn M. 2003. Gene Expression In the Normal Adult Human Kidney Assessed By Complementary DNA Microarray. Mol. Biol. Cell **15**:649-56.
173. Chang HY, Sneddon JB, Alizadeh AA, Sood R, West R, Montgomery K, Chi J-T, van de Rijn M, Botstein D, Brown PO. 2004. Gene expression signature of fibroblast serum response predicts human cancer progression; similarities between tumors and wounds. PLoS Biology **2**: 206-214.
174. Lapointe J, Li C, Higgins JP, van de Rijn M, Bair E, Montgomery K, Ferrari M, Egevad L, Rayford W, Bergerheim U, Ekman P, DeMarzo AM, Tibshirani R, Botstein D, Brown PO, Brooks JD, Pollack JR. 2004. Gene expression profiling identifies clinically relevant subtypes of prostate cancer. Proc. Natl. Acad. Sci. USA **101**:811-6.
175. Munagala K, Tibshirani R, Brown PO. 2004. Cancer characterization and feature set extraction by discriminative margin clustering. BMC Bioinformatics **5**:21.
176. Piedras-Renteria ES, Pyle JL, Diehn M, Glickfeld LL, Harata NC, Cao Y, Kavalali ET, Brown PO, Tsien RW. Presynaptic homeostasis at CNS nerve terminals

compensates for lack of a key Ca²⁺ entry pathway. Proc Natl Acad Sci U S A. **101**:3609-3614.

177. West RB, Harvell J, Linn SC, Lui CL, Prapong W, Hernandez-Boussard T, Montgomery K, Nielsen TO, Rubin BP, Patel R, Goldblum JR, Brown PO, van de Rijn M. 2004. Apo D in soft tissue tumors: a novel marker for dermatofibrosarcoma protuberans. Am J Surg Pathol. **28**:1063-9.
178. West RB, Corless CL, Chen X, Rubin BP, Subramanian S, Montgomery K, Zhu S, Ball CA, Nielsen TO, Patel R, Goldblum JR, Brown PO, Heinrich MC, van de Rijn M. 2004. The novel marker, DOG1, is expressed ubiquitously in gastrointestinal stromal tumors irrespective of KIT or PDGFRA mutation status. Am J Pathol. **165**:107-13.
179. Gerber AP, Herschlag D, Brown PO. 2004. Extensive association of functionally and cytologically related mRNAs with Puf-family RNA binding proteins in yeast. PLoS Biology **2**: 342-354.
180. Murray JI, Whitfield ML, Trinklein ND, Myers RM, Brown PO, Botstein D. 2004. Diverse and specific gene expression responses to stresses in cultured human cells. Mol Biol Cell **15**:2361-74.
181. Gonzales R, Fawcett P, O'Riordan M, Lee K-D, Havell EA, Brown PO, Portnoy DA. 2004. A specific gene expression program triggered by gram positive bacteria in the cytosol. Proc Natl Acad Sci U S A **101**: 11386-91.
182. Eisen MB, Brown PO, Varmus HE. 2004. PLoS Medicine- A Medical Journal for the Internet Age. PLoS Med. **1**:e31.
183. Rubins KH, Hensley LE, Jahrling PB, Whitney AR, Geisbert TW, Huggins JW, Owen A, LeDuc JW, Brown PO, Relman DA. 2004. The host response to smallpox: Analysis of the gene expression program in peripheral blood cells in a primate model. Proc Natl Acad Sci U S A **101**: 15190-5.
184. Tu IP, Schaner M, Diehn M, Sikic BI, Brown PO, Botstein D, Fero MJ. 2004. A method for detecting and correcting feature misidentification on expression microarrays. BMC Genomics **5**:64.
185. Peter BJ, Arsuaga J, Breier AM, Khodursky AB, Brown PO, Cozzarelli NR. 2004. Genomic transcriptional response to loss of chromosomal supercoiling in *Escherichia coli*. Genome Biol;**5**:R87.
186. Ball CA, Awad IA, Demeter J, Gollub J, Hebert JM, Hernandez-Boussard T, Jin H, Matese JC, Nitzberg M, Wymore F, Zachariah ZK, Brown PO, Sherlock G. 2005. The Stanford Microarray Database accommodates additional microarray platforms and data formats. Nucleic Acids Res. **33**: D580-2.
187. Shyamsundar R, Kim YH, Higgins JP, Montgomery K, Jorden M, Sethuraman A, van de Rijn M, Botstein D, Brown PO, Pollack JR. 2005. A DNA microarray survey of gene expression in normal human tissues. Genome Biol. **6**: R22.
188. Chang HY, Nuyten D, Sneddon JB, Hastie T, Tibshirani R, Sorlie T, Dai H, He Y, van't Veer L, Bartelink H, van de Rijn M, Brown PO, van de Vijver M. 2005. Robustness, Scalability, and Integration of a Wound Response Gene Expression

Signature in Predicting Survival of Human Breast Cancer Patients. Proc Natl Acad Sci U S A **102**:3738-43.

189. Liang Y, Diehn M, Watson N, Bollen AW, Aldape KD, Nicholas K, Lamborn KR, Berger MS, Botstein D, Brown PO, Israel MA. 2005. Gene expression profiling reveals molecularly and clinically distinct subtypes of glioblastoma multiforme. Proc Natl Acad Sci U S A **102**:5814-9
190. Arava Y, Boas F, Brown PO, Herschlag D. 2005. Dissecting eukaryotic translation and its control by ribosome density mapping. Nucleic Acids Res. **33**:2421-32.
191. West RB, Nuyten DS, Subramanian S, Nielsen TO, Corless CL, Rubin BP, Montgomery K, Zhu S, Patel R, Hernandez-Boussard T, Goldblum JR, Brown PO, van de Vijver M, van de Rijn M. 2005. Determination of stromal signatures in breast carcinoma. PLoS Biol. **3**:e187.
192. Diehn JJ, Diehn M, Marmor MF, Brown PO. 2005. Differential gene expression in anatomical compartments of the human eye. Genome Biol.**6**:R74.
193. Chen DS, Soen Y, Stuge TB, Lee PP, Weber JS, Brown PO, Davis MM. 2005. Marked Differences in Human Melanoma Antigen-Specific T Cell Responsiveness after Vaccination Using a Functional Microarray. PLoS Med. **2**:e265.
194. West RB, Rubin BP, Miller MA, Subramanian S, Kaygusuz G, Montgomery K, Zhu S, Marinelli RJ, De Luca A, Downs-Kelly E, Goldblum JR, Corless CL, Brown PO, Gilks CB, Nielsen TO, Huntsman D, van de Rijn M. 2006. A landscape effect in tenosynovial giant-cell tumor from activation of CSF1 expression by a translocation in a minority of tumor cells. Proc. Natl. Acad. Sci. USA **103**:690-5.
195. Gerber A, Luschnig S, Krasnow M, Brown PO, Herschlag D. 2006. Genome-wide identification of mRNAs associated with the translational regulator PUMILIO in *Drosophila melanogaster*. Proc. Natl. Acad. Sci. USA **103**:4487-92.
196. Chi J-T, Wang Z, Nuyten D, Rodriguez EH, Schaner ME, Salim A, Wang Y, Kristensen GB, Helland A, Borreson-Dale A-L, Giaccia A, Longaker MT, Hastie T, Yang G, van de Vijver MJ, Brown PO. 2006. Gene expression programs in response to hypoxia; cell type specificity and prognostic significance in human cancers. PLoS Medicine **3**:e47.
197. Diehn M, Bhattacharya R, Botstein D, Brown PO. 2006. Genome-scale identification of membrane-associated mRNAs. PLoS Genetics **2**:e11.
198. Sood R, Zehnder J, Druzin M, Brown PO. 2006. Gene expression patterns in human placenta. Proc. Natl. Acad. Sci. USA **103**:5478-83.
199. Palmer C, Bik E, Eisen MB, Eckberg PB, Sana TR, Wolber PK, Relman DA, Brown PO. 2006. Rapid quantitative profiling of complex microbial populations. Nucl. Acids Res. **34**:e5.
200. Palmer C, Diehn M, Alizadeh AA, Brown PO. 2006. Cell-type specific gene expression profiles of leukocytes in human peripheral blood. BMC Genomics **7**:115.

201. Soen Y, Mori A, Palmer TD, Brown PO. 2006. Exploring the regulation of human neural precursor cell differentiation using arrays of signaling microenvironments. Molecular Systems Biology **2**: 37.
202. Rinn JL, Bondre C, Gladstone HB, Brown PO, Chang HY. 2006. Anatomic demarcation by positional variation in fibroblast gene expression programs. PLOS Genetics **2**: e119.
203. Brown PO. 2006. Exploring along a crooked path. Am. J. Hum. Genet. **79**: 429-33.
204. Kapp AV, Jeffrey SS, Langerod A, Borresen-Dale A-L, Han W, Noh D-Y, Bukholm IRK, Nicolau M, Brown PO and Tibshirani R. 2006. Discovery and validation of breast cancer subtypes. BMC Genomics **7**:231
205. Sneddon JB, Zhen HH, Montgomery K, van de Rijn M, Tward AD, West R, Gladstone H, Chang HY, Morganroth GS, Oro AE, Brown PO. 2006. BMP Antagonist Gremlin 1 is Widely Expressed by Cancer-associated Stromal Cells and Can Promote Tumor Cell Proliferation. Proc. Natl. Acad. Sci. USA **103**:14842-7.
206. Nuyten DS, Kreike B, Hart AA, Chi JT, Sneddon JB, Wessels LF, Peterse HJ, Bartelink H, Brown PO, Chang HY, van de Vijver MJ. 2006. Predicting a local recurrence after breast-conserving therapy by gene expression profiling. Breast Cancer Res. **8**:R62.
207. Demeter J, Beauheim C, Gollub J, Hernandez-Boussard T, Jin H, Maier D, Matese JC, Nitzberg M, Wymore F, Zachariah ZK, Brown PO, Sherlock G, Ball CA. 2006. The Stanford Microarray Database: implementation of new analysis tools and open source release of software. Nucleic Acids Res. **35**:D766-70.
208. Lowe AW, Olsen M, Hao Y, Lee SP, Taek Lee K, Chen X, van de Rijn M, Brown PO. 2007. Gene expression patterns in pancreatic tumors, cells and tissues. PLoS ONE. **2**:e323.