

- Abdulhussein R, McFadden C, Fuentes-Prior P, Vogel WF. (2004). Exploring the collagen-binding site of the DDR1 tyrosine kinase receptor. *J Biol Chem* (published online ahead of print May 10)
- Akey JM, Sosnoski D, Parra E, Dios S, Hiester K, Su B, Bonilla C, Jin L, Shriner MD. (2001). Melting curve analysis of SNPs (McSNP): a gel-free and inexpensive approach for SNP genotyping. *Biotechniques* 30, 358-62.
- Alexander S, Sydow LM, Wessels D, Soll DR. (1992). Discoidin proteins of Dictyostelium are necessary for normal cytoskeletal organization and cellular morphology during aggregation. *Differentiation* 51, 149-61.
- Ali SA, Pappas IS, Parnavelas JG. (1998). Collagen type IV promotes the differentiation of neuronal progenitors and inhibits astrogial differentiation in cortical cell cultures. *Brain Res Dev Brain Res* 110, 31-8.
- Alves F, Vogel W, Mossie K, Millauer B, Hofler H, Ullrich A. (1995). Distinct structural characteristics of discoidin I subfamily receptor tyrosine kinases and complementary expression in human cancer. *Oncogene* 10, 609-18.
- Alves F, Saupe S, Ledwon M, Schaub F, Hiddemann W, Vogel WF. (2001). Identification of two novel, kinase-deficient variants of discoidin domain receptor 1: differential expression in human colon cancer cell lines. *FASEB J* 15, 1321-3.
- Andreasen NC, Carpenter WT. (1993). Diagnosis and classification of schizophrenia. *Schizophr Bull* 19, 199-214.
- Antonarakis SE, Blouin JL, Pulver AE, Wolyniec P, Lasseter VK, Nestadt G, Kasch L, Babb R, Kazazian HH, Dombroski B, et al. (1995). Schizophrenia susceptibility and chromosome 6p24-22. *Nat Genet* 11, 235-6.
- Arolt V, Lencer R, Nolte A, Muller-Myhsok B, Purmann S, Schurmann M, Leutelt J, Pinnow M, Schwinger E. (1996). Eye tracking dysfunction is a putative phenotypic susceptibility marker of schizophrenia and maps to a locus on chromosome 6p in families with multiple occurrence of the disease. *Am J Med Genet* 67, 564-79.
- Arolt V, Lencer R, Purmann S, Schurmann M, Muller-Myhsok B, Krecker K, Schwinger E. (1999). Testing for linkage of eye tracking dysfunction and schizophrenia to markers on chromosomes 6, 8, 9, 20, and 22 in families multiply affected with schizophrenia. *Am J Med Genet* 88:603-6.
- Bailer U, Leisch F, Meszaros K, Lenzinger E, Willinger U, Strobl R, Gebhardt C, Gerhard E, Fuchs K, Sieghart W, et al. (2000). Genome scan for susceptibility loci for schizophrenia. *Neuropsychobiology* 42, 175-82.
- Barcellos LF, Klitz W, Field LL, Tobias R, Bowcock AM, Wilson R, Nelson MP, Nagatomi J, Thomson G. (1997). Association mapping of disease loci, by use of a pooled DNA genomic screen. *Am J Hum Genet* 61, 734-47.
- Barker KT, Martindale JE, Mitchell PJ, Kamalati T, Page MJ, Phippard DJ, Dale TC, Gusterson BA, Crompton MR. (1995). Expression patterns of the novel receptor-like tyrosine kinase, DDR, in human breast tumours. *Oncogene* 10, 569-75.
- Bartzokis G. (2002). Schizophrenia: breakdown in the well-regulated lifelong process of brain development and maturation. *Neuropsychopharmacology* 27, 672-83.
- Bassett AS, Chow EW. (1999). 22q11 deletion syndrome: a genetic subtype of schizophrenia. *Biol Psychiatry* 46, 882-91.

- Baumgartner S, Hofmann K, Chiquet-Ehrismann R, Bucher P. (1998). The discoidin domain family revisited: new members from prokaryotes and a homology-based fold prediction. *Protein Sci* 7, 1626-31.
- Baxter GT, Radeke MJ, Kuo RC, Makrides V, Hinkle B, Hoang R, Medina-Selby A, Coit D, Valenzuela P, Feinstein SC. (1997). Signal transduction mediated by the truncated trkB receptor isoforms, trkB.T1 and trkB.T2. *J Neurosci* 17, 2683-90.
- Benes FM. (1989). Myelination of cortical-hippocampal relays during late adolescence. *Schizophr Bull* 15, 585-93.
- Benes FM, Turtle M, Khan Y, Farol P. (1994). Myelination of a key relay zone in the hippocampal formation occurs in the human brain during childhood, adolescence, and adulthood. *Arch Gen Psychiatry* 51, 477-484.
- Bertina RM, Koeleman BP, Koster T, Rosendaal FR, Dirven RJ, de Ronde H, van der Velden PA, Reitsma PH. (1994). Mutation in blood coagulation factor V associated with resistance to activated protein C. *Nature* 369, 64-67.
- Bhatt RS, Tomoda T, Fang Y, Hatten ME. (2000). Discoidin domain receptor 1 functions in axon extension of cerebellar granule neurons. *Gene Dev*. 14, 2216-2228.
- Blackwood DH, Fordyce A, Walker MT, St Clair DM, Porteous DJ, Muir WJ. (2001). Schizophrenia and affective disorders-cosegregation with a translocation at chromosome 1q42 that directly disrupts brain-expressed genes: clinical and P300 findings in a family. *Am J Hum Genet* 69, 428-33.
- Blazej RG, Paegel BM, Mathies RA. (2003). Polymorphism ratio sequencing: a new approach for single nucleotide polymorphism discovery and genotyping. *Genome Res* 13, 287-93.
- Blouin JL, Dombroski BA, Nath SK, Lasseter VK, Wolyniec PS, Nestadt G, Thornquist M, Ullrich G, McGrath J, Kasch L, et al. (1998). Schizophrenia susceptibility loci on chromosomes 13q32 and 8p21. *Nat Genet* 20, 70-3.
- Blume-Jensen P, Hunter T. (2001). Oncogenic kinase signaling. *Nature* 411, 355-365.
- Bogerts B, Falkai P, Greve B. (1991). Evidence of reduced temporolimbic structure volumes in schizophrenia. *Arch Gen Psychiatry* 48, 956-8.
- Boin F, Zanardini R, Pioli R, Altamura CA, Maes M, Gennarelli M. (2001). Association between -G308A tumor necrosis factor alpha gene polymorphism and schizophrenia. *Mol Psychiatry* 6, 79-82.
- Borg JP, Marchetto S, Le Bivic A, Ollendorff V, Jaulin-Bastard F, Saito H, Fournier E, Adelaide J, Margolis B, Birnbaum D. (2000). ERBIN: a basolateral PDZ protein that interacts with the mammalian ERBB2/HER2 receptor. *Nat Cell Biol* 2, 407-14.
- Braun A, Little DP, Koster H. (1997). Detecting CFTR gene mutations by using primer oligo base extension and mass spectrometry. *Clin Chem* 43, 1151-1158.
- Brunak S, Engelbrecht J, Knudsen S. (1991). Prediction of human mRNA donor and acceptor sites from the DNA sequence. *J Mol Biol* 220, 49-65.
- Busjahn A, Li GH, Faulhaber HD, Rosenthal M, Becker A, Jeschke E, Schuster H, Timmermann B, Hoehe MR, Luft FC. (2000). beta-2 adrenergic receptor gene

- variations, blood pressure, and heart size in normal twins. *Hypertension* 35, 555-560.
- Cannon TD, Kaprio J, Lonnqvist J, Huttunen M, Koskenvuo M. (1998). The genetic epidemiology of schizophrenia in a Finnish twin cohort. A population-based modeling study. *Arch Gen Psychiatry* 55, 67-74.
- Cardno AG, Marshall EJ, Coid B, Macdonald AM, Ribchester TR, Davies NJ, Venturi P, Jones LA, Lewis SW, Sham PC, et al. (1999). Heritability estimates for psychotic disorders: the Maudsley twin psychosis Series. *Arch Gen Psychiatry* 56, 162-8.
- Cargill M, Altshuler D, Ireland J, Sklar P, Ardlie K, Patil N, Shaw N, Lane CR, Lim EP, Kalyanaraman N. (1999). Characterization of single-nucleotide polymorphisms in coding regions of human genes. *Nat Genet* 22, 231-238.
- Carlson CS, Eberle MA, Rieder MJ, Smith JD, Kruglyak L, Nickerson DA. (2003). Additional SNPs and linkage-disequilibrium analyses are necessary for whole-genome association studies in humans. *Nat Genet* 33, 518-21.
- Carpenter WT, Kirkpatrick B. (1988). The heterogeneity of the long-term course of schizophrenia. *Schizophr Bull* 14, 645-52.
- Chakraborty R, Kimmel M, Stivers DN, Davison LJ, Deka R. (1997). Relative mutation rates at di-, tri-, and tetranucleotide microsatellite loci. *Proc Natl Acad Sci USA* 94, 1041-1046.
- Chana G, Landau S, Beasley C, Everall IP, Cotter D. (2003). Two-dimensional assessment of cytoarchitecture in the anterior cingulate cortex in major depressive disorder, bipolar disorder, and schizophrenia: evidence for decreased neuronal somal size and increased neuronal density. *Biol Psychiatry* 53, 1086-98.
- Chiu KC, Chuang LM, Yoon C. (2001). The A54T polymorphism at the intestinal fatty acid binding protein 2 is associated with insulin resistance in glucose tolerant Caucasians. *BMC Genet* 2, 7.
- Chumakov I, Blumenfeld M, Guerassimenko O, Cavarec L, Palicio M, Abderrahim H, Bougueret L, Barry C, Tanaka H, La Rosa P, et al. (2002). Genetic and physiological data implicating the new human gene G72 and the gene for D-amino acid oxidase in schizophrenia. *Proc Natl Acad Sci USA* 99, 13675-13680.
- Clark AG. (1990). Inference of haplotypes from PCR-amplified samples of diploid populations. *Mol Biol Evol* 7, 111-122.
- Clark AG, Weiss KM, Nickerson DA, Taylor SL, Buchanan A, Stengard J, Salomaa V, Vartiainen E, Perola M, Boerwinkle E, et al. (1998). Haplotype structure and population genetic inferences from nucleotide-sequence variation in human lipoprotein lipase. *Am J Hum Genet* 63, 595-612.
- Combet C, Blanchet C, Geourjon C, Deléage G. (2000). NPS@: Network Protein Sequence Analysis. *TIBS* 25, 147-150.
- Conner BJ, Reyes AA, Morin C, Itakura K, Teplitz RL, Wallace RB. (1983). Detection of sickle cell beta S-globin allele by hybridization with synthetic oligonucleotides. *Proc Natl Acad Sci USA* 80, 278-282.
- Cotter DR, Pariante CM, Everall IP. Glial cell abnormalities in major psychiatric disorders: the evidence and implications. (2001). *Brain Res Bull* 55, 585-595.

- Craig T, Hwang MY, Bromet EJ. (2002). Obsessive-compulsive and panic symptoms in patients with first-admission psychosis. *Am J Psychiatry* 159, 592-598.
- Crow TJ. (1990). The continuum of psychosis and its genetic origins. The sixty-fifth Maudsley lecture. *Br J Psychiatry* 156, 788-797.
- Cullen M, Perfetto SP, Klitz W, Nelson G, Carrington M. (2002). High-resolution patterns of meiotic recombination across the human major histocompatibility complex. *Am J Hum Genet* 71, 759-776.
- Curat CA, Eck M, Dervillez X, Vogel W. (2001). Mapping of epitopes in discoidin domain receptor 1 critical for collagen binding. *J Biol Chem* 276, 45952-45958.
- Curat CA, Vogel WF. (2002). Discoidin domain receptor 1 controls growth and adhesion of mesangial cells. *J Am Soc Nephrol* 13:2648-2656.
- De Stefano V, Dekou V, Nicoud V, Chasse JF, London J, Stansbie D, Humphries SE, Gudnason V. (1998). Linkage disequilibrium at the cystathionine beta synthase (CBS) locus and the association between genetic variation at the CBS locus and plasma levels of homocysteine. The Ears II Group. European Atherosclerosis Research Study. *Ann Hum Genet* 62, 481-490.
- Dejmek J, Dib K, Jonsson M, Andersson T. (2003). Wnt-5a and G-protein signaling are required for collagen-induced DDR1 receptor activation and normal mammary cell adhesion. *Int J Cancer* 103, 344-351.
- DeLisi LE, Hoff AL, Schwartz JE, Shields GW, Halthore SN, Gupta SM, Henn FA, Anand AK. (1991). Brain morphology in first-episode schizophrenic-like psychotic patients: a quantitative magnetic resonance imaging study. *Biol Psychiatry* 29, 159-75.
- DeLisi LE, Shaw SH, Crow TJ, Shields G, Smith AB, Larach VW, Wellman N, Loftus J, Nanthakumar B, Razi K, et al. (2002). A genome-wide scan for linkage to chromosomal regions in 382 sibling pairs with schizophrenia or schizoaffective disorder. *Am J Psychiatry* 159, 803-12.
- Devine JM, Williams JG. (1982). Characterization of sequence elements at the 5' end of a discoidin I gene isolated from *Dictyostelium discoideum*. *Nucleic Acids Res* 10, 1231-1241.
- Devlin B, Roeder K. (1999). Genomic control for association studies. *Biometrics* 55, 997-1004.
- Devlin B, Bacanu SA, Roeder K, Reimherr F, Wender P, Galke B, Novasad D, Chu A, TCuenca K, Tiobek S, et al. (2002). Genome-wide multipoint linkage analyses of multiplex schizophrenia pedigrees from the oceanic nation of Palau. *Mol Psychiatry* 7, 689-94.
- Di Marco E, Cutuli N, Guerra L, Cancedda R, De Luca M. (1993). Molecular cloning of trkE, a novel trk-related putative tyrosine kinase receptor isolated from normal human keratinocytes and widely expressed by normal human tissues. *J Biol Chem* 268:24290-24295.
- Dionne IJ, Garant MJ, Nolan AA, Pollin TI, Lewis DG, Shuldiner AR, Poehlman ET. (2002). Association between obesity and a polymorphism in the beta(1)-adrenoceptor gene (Gly389Arg ADRB1) in Caucasian women. *Int J Obes Relat Metab Disord* 26, 633-639.

- Douglas JA, Boehnke M, Gillanders E, Trent JM, Gruber SB. (2001). Experimentally-derived haplotypes substantially increase the efficiency of linkage disequilibrium studies. *Nat Genet* 28: 361-364.
- Elvevag B, Goldberg TE. (2000). Cognitive impairment in schizophrenia is the core of the disorder. *Crit Rev Neurobiol* 14, 1-21.
- Engelke CE, Meinl W, Boeing H, Glatt H. (2000). Association between functional genetic polymorphisms of human sulfotransferases 1A1 and 1A2. *Pharmacogenetics* 10, 163-169.
- Ensslin MA, Shur BD. (2003). Identification of mouse sperm SED1, a bimotif EGF repeat and discoidin-domain protein involved in sperm-egg binding. *Cell* 114, 405-417.
- Ewing B, Hillier L, Wendl MC, Green P. (1998). Base-calling of automated sequencer traces using phred. I. Accuracy assessment. *Genome Res* 8, 175-185.
- Excoffier L, Slatkin M. (1995). Maximum-likelihood estimation of molecular haplotype frequencies in a diploid population. *Mol Biol Evol* 12, 921-927.
- Fan JB, Chen X, Halushka MK, Berno A, Huang X, Ryder T, Lipshutz RJ, Lockhart DJ, Chakravarti A. (2000). Parallel genotyping of human SNPs using generic high-density oligonucleotide tag arrays. *Genome Res* 10, 853-860.
- Faraci E, Eck M, Gerstmayer B, Bosio A, Vogel WF. (2003). An extracellular matrix-specific microarray allowed the identification of target genes downstream of discoidin domain receptors. *Matrix Biol* 22, 373-381.
- Farmer AE, McGuffin P, Gottesman II. (1987). Twin concordance for DSM-III schizophrenia. Scrutinizing the validity of the definition. *Arch Gen Psychiatry* 44, 634-641.
- Fields RD, Stevens-Graham B. (2002). New insights into neuron-glia communication. *Science* 298, 556-62.
- Fisher RM, Humphries SE, Talmud PJ. (1997). Common variation in the lipoprotein lipase gene: effects on plasma lipids and risk of atherosclerosis. *Atherosclerosis* 135, 145-159.
- Foehr ED, Tatavos A, Tanabe E, Raffioni S, Goetz S, Dimarco E, De Luca M, Bradshaw RA. (2000). Discoidin domain receptor 1 (DDR1) signaling in PC12 cells: activation of juxtamembrane domains in PDGFR/DDR/TrkA chimeric receptors. *FASEB J* 14, 973-981.
- Fors L, Lieder KW, Vavra SH, Kwiatkowski RW. (2000). Large-scale SNP scoring from unamplified genomic DNA. *Pharmacogenomics* 1, 219-229.
- Freedman R, Adler LE, Leonard S. (1999). Alternative phenotypes for the complex genetics of schizophrenia. *Biol Psychiatry* 45, 551-8.
- Freedman ML, Reich D, Penney KL, McDonald GJ, Mignault AA, Patterson N, Gabriel SB, Topol EJ, Smoller JW, Pato CN, et al. (2004). Assessing the impact of population stratification on genetic association studies. *Nat Genet* 36, 388-393.
- Frosst P, Blom HJ, Milos R, Goyette P, Sheppard CA, Matthews RG, Boers GJ, den Heijer M, Kluijtmans LA, van den Heuvel LP, et al. (1995). A candidate genetic

risk factor for vascular disease: a common mutation in methylenetetrahydrofolate reductase. *Nat Genet* 10, 111-113.

Garber ME, Troyanskaya OG, Schluens K, Petersen S, Thaesler Z, Pacyna-Gengelbach M, van de Rijn M, Rosen GD, Perou CM, Whyte RI, et al. (2001). Diversity of gene expression in adenocarcinoma of the lung. *Proc Natl Acad Sci USA* 98, 13784-13789.

Garner CC, Nash J, Huganir RL. (2000). PDZ domains in synapse assembly and signalling. *Trends Cell Biol* 10, 274-280.

Gershon ES, DeLisi LE, Hamovit J, Nurnberger JI, Maxwell ME, Schreiber J, Dauphinais D, Dingman CW, Guroff JJ. (1988). A controlled family study of chronic psychoses. Schizophrenia and schizoaffective disorder. *Arch Gen Psychiatry* 45, 328-336.

Glantz LA, Lewis DA. (2000). Decreased dendritic spine density on prefrontal cortical pyramidal neurons in schizophrenia. *Arch Gen Psychiatry* 57, 65-73.

Goetschy JF, Ulrich G, Aunis D, Ciesielski-Treska J. (1987). Fibronectin and collagens modulate the proliferation and morphology of astroglial cells in culture. *Int J Dev Neurosci* 5, 63-70.

Goldberg D P, Williams P. (1988). A User's Guide to the GHQ. Windsor: NFER-Nelson.

Goldberg TE, Egan MF, Gscheidle T, Coppola R, Weickert T, Kolachana BS, Goldman D, Weinberger DR. (2003). Executive subprocesses in working memory: relationship to catechol-O-methyltransferase Val158Met genotype and schizophrenia. *Arch Gen Psychiatry* 60, 889-896.

Gottesman I, Shields J. (1982). Schizophrenia: the epigenetic puzzle. Cambridge: Cambridge University Press.

Gottesman II, Bertelsen A. (1989). Confirming unexpressed genotypes for schizophrenia. Risks in the offspring of Fischer's Danish identical and fraternal discordant twins. *Arch Gen Psychiatry* 46, 867-872.

Gurling HM, Kalsi G, Brynjolfson J, Sigmundsson T, Sherrington R, Mankoo BS, Read T, Murphy P, Blaveri E, McQuillin A, et al. (2001). Genomewide genetic linkage analysis confirms the presence of susceptibility loci for schizophrenia, on chromosomes 1q32.2, 5q33.2, and 8p21-22 and provides support for linkage to schizophrenia, on chromosomes 11q23.3-24 and 20q12.1-11.23. *Am J Hum Genet* 68, 661-673.

Hakak Y, Walker JR, Li C, Wong WH, Davis KL, Buxbaum JD, Haroutunian V, Fienberg AA. (2001). Genome-wide expression analysis reveals dysregulation of myelination-related genes in chronic schizophrenia. *Proc Natl Acad Sci USA* 98, 4746-4751.

Hall JM, LeDuc CA, Watson AR, Roter AH. (1996). An approach to high-throughput genotyping. *Genome Res* 6, 781-790.

Halushka MK, Fan JB, Bentley K, Hsie L, Shen N, Weder A, Cooper R, Lipshutz R, Chakravarti A. (1999). Patterns of single-nucleotide polymorphisms in candidate genes for blood-pressure homeostasis. *Nat Genet* 22, 239-247.

- Hanayama R, Tanaka M, Miwa K, Shinohara A, Iwamatsu A, Nagata S. (2002). Identification of a factor that links apoptotic cells to phagocytes. *Nature* 417, 182-187.
- Harrison PJ. (1999). The neuropathology of schizophrenia. A critical review of the data and their interpretation. *Brain* 122, 593-624.
- Harrison PJ. (2004). The hippocampus in schizophrenia: a review of the neuropathological evidence and its pathophysiological implications. *Psychopharmacology* Mar 6 (on line).
- Hawley ME, Kidd KK. (1995). HAPLO: a program using the EM algorithm to estimate the frequencies of multi-site haplotypes. *J Hered* 86, 409-11.
- He Z, Tessier-Lavigne M. (1997). Neuropilin is a receptor for the axonal chemorepellent Semaphorin III. *Cell* 90, 739-751.
- Hegele RA, Cao H. (2001). Single nucleotide polymorphisms of RXRA encoding retinoid X receptor alpha. *J Hum Genet* 46, 423-425.
- Heldin CH. (1995). Dimerization of cell surface receptors in signal transduction. *Cell* 80, 213-223.
- Henke W, Herdel K, Jung K, Schnorr D, Loening SA. (1997). Betaine improves the PCR amplification of GC-rich DNA sequences. *Nucleic Acids Res* 25, 3957-3958.
- Hixson JE, Vernier DT. (1990). Restriction isotyping of human apolipoprotein E by gene amplification and cleavage with Hhal. *J Lipid Res* 31, 545-548.
- Ho BC, Andreasen NC, Nopoulos P, Arndt S, Magnotta V, Flaum M. (2003). Progressive structural brain abnormalities and their relationship to clinical outcome: a longitudinal magnetic resonance imaging study early in schizophrenia. *Arch Gen Psychiatry* 60, 585-594.
- Hof PR, Haroutunian V, Copland C, Davis KL, Buxbaum JD. (2002). Molecular and cellular evidence for an oligodendrocyte abnormality in schizophrenia. *Neurochem Res* 27, 1193-1200.
- Hof PR, Haroutunian V, Friedrich VL Jr, Byne W, Buitron C, Perl DP, Davis KL. (2003). Loss and altered spatial distribution of oligodendrocytes in the superior frontal gyrus in schizophrenia. *Biol Psychiatry* 53, 1075-1085.
- Hoffmeyer S, Burk O, von Richter O, Arnold HP, Brockmoller J, Johne A, Cascorbi I, Gerloff T, Roots I, Eichelbaum M, et al. (2000). Functional polymorphisms of the human multidrug-resistance gene: multiple sequence variations and correlation of one allele with P-glycoprotein expression and activity in vivo. *Proc Natl Acad Sci USA* 97, 3473-3478.
- Holliday R, Grigg GW. (1993). DNA methylation and mutation. *Mutat Res* 285, 61-67.
- Honer WG, Falkai P, Chen C, Arango V, Mann JJ, Dwork AJ. (1999). Synaptic and plasticity-associated proteins in anterior frontal cortex in severe mental illness. *Neuroscience* 91, 1247-1255.
- Hou G, Vogel W, Bendeck MP. (2001). The discoidin domain-receptor tyrosine kinase DDR1 in arterial wound repair. *J Clin Invest* 107, 727-735.

- Hou G, Vogel WF, Bendeck MP. (2002). Tyrosine kinase activity of discoidin domain receptor 1 is necessary for smooth muscle cell migration and matrix metalloproteinase expression. *Circ Res* 90, 1147-1149.
- Hovatta I, Lichtermann D, Juvonen H, Suvisaari J, Terwilliger JD, Arajarvi R, Kokko-Sahin ML, Ekelund J, Lonnqvist J, Peltonen L. (1998). Linkage analysis of putative schizophrenia gene candidate regions on chromosomes 3p, 5q, 6p, 8p, 20p and 22q in a population-based sampled Finnish family set. *Mol Psychiatry* 3, 452-457.
- Hwu HG, Lin MW, Lee PC, Lee SF, Ou-Yang WC, Liu CM. (2000). Evaluation of linkage of markers on chromosome 6p with schizophrenia in Taiwanese families. *Am J Med Genet* 96, 74-78.
- Ji J, Chen X, Leung SY, Chi JT, Chu KM, Yuen ST, Li R, Chan AS, Li J, Dunphy N, So S. (2002). Comprehensive analysis of the gene expression profiles in human gastric cancer cell lines. *Oncogene* 21, 6549-6556.
- Johnson JD, Edman JC, Rutter WJ. (1993). A receptor tyrosine kinase found in breast carcinoma cells has an extracellular discoidin I-like domain. *Proc Natl Acad Sci USA* 90, 10891.
- Jonsson M, Andersson T. (2001). Repression of Wnt-5a impairs DDR1 phosphorylation and modifies adhesion and migration of mammary cells. *J Cell Sci* 114, 2043-2053.
- Joober R, Zarate JM, Rouleau GA, Skamene E, Boksa P. (2002). Provisional mapping of quantitative trait loci modulating the acoustic startle response and prepulse inhibition of acoustic startle. *Neuropsychopharmacology* 27, 765-781.
- Jouanolle AM, Fergelot P, Gandon G, Yaouanq J, Le Gall JY, David V. (1997). A candidate gene for hemochromatosis: frequency of the C282Y and H63D mutations. *Hum Genet* 100, 544-547.
- Kafatos FC, Jones CW, Efstratiadis A. (1979). Determination of nucleic acid sequence homologies and relative concentrations by a dot hybridization procedure. *Nucleic Acids Res* 7, 1541-1552.
- Kamohara H, Yamashiro S, Galligan C, Yoshimura T. (2001). Discoidin domain receptor 1 isoform-a (DDR1alpha) promotes migration of leukocytes in three-dimensional collagen lattices. *FASEB J* 15, 2724-2726.
- Kane WH, Davie EW. (1986). Cloning of a cDNA coding for human factor V, a blood coagulation factor homologous to factor VIII and ceruloplasmin. *Proc Natl Acad Sci USA* 83, 6800-6804.
- Katila H, Hanninen K, Hurme M. (1999). Polymorphisms of the interleukin-1 gene complex in schizophrenia. *Mol Psychiatry* 4, 179-181.
- Kawanishi Y, Harada S, Tachikawa H, Okubo T, Shiraishi H. (2000). Novel polymorphisms of the AP-2 gene (6p24): analysis of association with schizophrenia. *J Hum Genet* 45, 24-30.
- Kealey C, Reynolds A, Mynett-Johnson L, Claffey E, McKeon P. (2001). No evidence to support an association between the oestrogen receptor beta gene and bipolar disorder. *Psychiatr Genet* 11, 223-226.

- Kendler KS, Gruenberg AM, Tsuang MT. (1985). Psychiatric illness in first-degree relatives of schizophrenic and surgical control patients. A family study using DSM-III criteria. *Arch Gen Psychiatry* 42, 770-779.
- Kirov G, Ivanov D, Williams NM, Preece A, Nikolov I, Milev R, Koleva S, Dimitrova A, Toncheva D, O'Donovan MC, et al. (2004). Strong evidence for association between the dystrobrevin binding protein 1 gene (DTNBP1) and schizophrenia in 488 parent-offspring trios from Bulgaria. *Biol Psychiatry* 55, 971-5.
- Kittles RA, Chen W, Panguluri RK, Ahaghotu C, Jackson A, Adebamowo CA, Griffin R, Williams T, Ukoli F, Adams-Campbell L, et al. (2002). CYP3A4-V and prostate cancer in African Americans: causal or confounding association because of population stratification? *Hum Genet* 110, 553-560.
- Knowler WC, Williams RC, Pettitt DJ, Steinberg AG. (1988). Gm3;5,13,14 and type 2 diabetes mellitus: an association in American Indians with genetic admixture. *Am J Hum Genet* 43, 520-526.
- Kobayashi S, Inoue S, Hosoi T, Ouchi Y, Shiraki M, Orimo H. (1996). Association of bone mineral density with polymorphism of the estrogen receptor gene. *J Bone Miner Res* 1, 306-311.
- Kogelnik AM, Lott MT, Brown MD, Navathe SB, Wallace DC. (1998). MITOMAP: a human mitochondrial genome database--1998 update. *Nucleic Acids Res* 26, 112-115.
- Kolodkin AL, Levengood DV, Rowe EG, Tai YT, Giger RJ, Ginty DD. (1997). Neuropilin is a semaphorin III receptor. *Cell* 90, 753-762.
- Kuimelis RG, Livak KJ, Mullah B, Andrus A. (1997). Structural analogues of TaqMan probes for real-time quantitative PCR. *Nucleic Acids Symp Ser* 37, 255-256.
- Kwok PY, Carlson C, Yager TD, Ankener W, Nickerson DA. (1994). Comparative analysis of human DNA variations by fluorescence-based sequencing of PCR products. *Genomics* 23, 138-144.
- Kwok PY, Chen X. (2003). Detection of single nucleotide polymorphisms. *Curr Issues Mol Biol* 5, 43-60.
- Labrador JP, Azcoitia V, Tuckermann J, Lin C, Olaso E, Manes S, Bruckner K, Goergen JL, Lemke G, Yancopoulos G, et al. (2001). The collagen receptor DDR2 regulates proliferation and its elimination leads to dwarfism. *EMBO J* 2, 446-452.
- Lai C, Lemke G. (1994). Structure and expression of the Tyro 10 receptor tyrosine kinase. *Oncogene* 9, 877-883.
- Lander ES, Schork NJ. (1994). Genetic dissection of complex traits. *Science* 265, 2037-2048.
- Lander E, Kruglyak L. (1995). Genetic dissection of complex traits: guidelines for interpreting and reporting linkage results. *Nat Genet* 11, 241-247.
- Landegren U, Kaiser R, Sanders J, Hood L. (1988). A ligase-mediated gene detection technique. *Science* 241, 1077-1080.
- Lara DR, Gama CS, Belmonte-de-Abreu P, Portela LV, Goncalves CA, Fonseca M, Hauck S, Souza DO. (2001). Increased serum S100B protein in schizophrenia: a study in medication-free patients. *J Psychiatr Res* 35, 11-14.

- Layne MD, Endege WO, Jain MK, Yet SF, Hsieh CM, Chin MT, Perrella MA, Blanar MA, Haber E, Lee ME. (1998). Aortic carboxypeptidase-like protein, a novel protein with discoidin and carboxypeptidase-like domains, is up-regulated during vascular smooth muscle cell differentiation. *J Biol Chem* 273, 15654-15660.
- Laval S, Butler R, Shelling AN, Hanby AM, Poulsom R, Ganesan TS. (1994). Isolation and characterization of an epithelial-specific receptor tyrosine kinase from an ovarian cancer cell line. *Cell Growth Differ* 5, 1173-1183.
- Le Hellard S, Ballereau SJ, Visscher PM, Torrance HS, Pinson J, Morris SW, Thomson ML, Semple CA, Muir WJ, Blackwood DH, et al. (2002). SNP genotyping on pooled DNAs: comparison of genotyping technologies and a semi automated method for data storage and analysis. *Nucleic Acids Res* 30, e74.
- Levinson DF, Mahtani MM, Nancarrow DJ, Brown DM, Kruglyak L, Kirby A, Hayward NK, Crowe RR, Andreasen NC, Black DW, et al. (1998). Genome scan of schizophrenia. *Am J Psychiatry* 155, 741-750.
- Lewine RR. (1980). Sex differences in age of symptom onset and first hospitalization in schizophrenia. *Am J Orthopsychiatry* 50, 316-322.
- L'hote CG, Thomas PH, Ganesan TS. (2002). Functional analysis of discoidin domain receptor 1: effect of adhesion on DDR1 phosphorylation. *FASEB J* 16, 234-236.
- Li WH, Ellsworth DL, Krushkal J, Chang BH, Hewett-Emmett D. (1996). Rates of nucleotide substitution in primates and rodents and the generation-time effect hypothesis. *Mol Phylogenet Evol* 5, 182-187.
- Lieber MR. (1997). The FEN-1 family of structure-specific nucleases in eukaryotic DNA replication, recombination and repair. *Bioessays* 19, 233-240.
- Lindholm E, Ekholm B, Balciuniene J, Johansson G, Castensson A, Koisti M, Nylander PO, Pettersson U, Adolfsson R, Jazin E. (1999). Linkage analysis of a large Swedish kindred provides further support for a susceptibility locus for schizophrenia on chromosome 6p23. *Am J Med Genet* 88, 369-377.
- Livak KJ, Marmaro J, Todd JA. (1995). Towards fully automated genome-wide polymorphism screening. *Nat Genet* 9, 341-342.
- Livak KJ. (1999). Allelic discrimination using fluorogenic probes and the 5' nuclease assay. *Genet Anal* 14, 143-149.
- Lizardi PM, Huang X, Zhu Z, Bray-Ward P, Thomas DC, Ward DC. (1998). Mutation detection and single-molecule counting using isothermal rolling-circle amplification. *Nat Genet* 19, 225-232.
- Longo MC, Berninger MS, Hartley JL. (1990). Use of uracil DNA glycosylase to control carry-over contamination in polymerase chain reactions. *Gene* 93, 125-128.
- Lyamichev V, Mast AL, Hall JG, Prudent JR, Kaiser MW, Takova T, Kwiatkowski RW, Sander TJ, de Arruda M, Arco DA, et al. (1999). Polymorphism identification and quantitative detection of genomic DNA by invasive cleavage of oligonucleotide probes. *Nat Biotechnol* 17, 292-296.
- Lyamichev VI, Kaiser MW, Lyamicheva NE, Vologodskii AV, Hall JG, Ma WP, Allawi HT, Neri BP. (2000). Experimental and theoretical analysis of the invasive signal amplification reaction. *Biochemistry* 39, 9523-9532.

- Lyamichev V, Neri B. (2003). Invader assay for SNP genotyping. *Methods Mol Biol* 212, 229-240.
- Martinou JC, Falls DL, Fischbach GD, Merlie JP. (1991). Acetylcholine receptor-inducing activity stimulates expression of the epsilon-subunit gene of the muscle acetylcholine receptor. *Proc Natl Acad Sci U S A* 88, 7669-7673.
- Martorell L, Virgos C, Valero J, Coll G, Figuera L, Joven J, Pocovi M, Labad A, Vilella E. (2001). Schizophrenic women with the APOE epsilon 4 allele have a worse prognosis than those without it. *Mol Psychiatry* 6, 307-310.
- Matsuyama W, Faure M, Yoshimura T. (2003). Activation of discoidin domain receptor 1 facilitates the maturation of human monocyte-derived dendritic cells through the TNF receptor associated factor 6/TGF-beta-activated protein kinase 1 binding protein 1 beta/p38 alpha mitogen-activated protein kinase signaling cascade. *J Immunol* 171, 3520-3532.
- Matsuyama W, Kamohara H, Galligan C, Faure M, Yoshimura T. (2003b). Interaction of discoidin domain receptor 1 isoform b (DDR1b) with collagen activates p38 mitogen-activated protein kinase and promotes differentiation of macrophages. *FASEB J* 17, 1286-1288.
- Matsuyama W, Wang L, Farrar WL, Faure M, Yoshimura T. (2004). Activation of discoidin domain receptor 1 isoform b with collagen up-regulates chemokine production in human macrophages: role of p38 mitogen-activated protein kinase and NF-kappaB. *J Immunol* 172, 2332-2340.
- Maziade M, Bissonnette L, Rouillard E, Martinez M, Turgeon M, Charron L, Pouliot V, Boutin P, Cliche D, Dion C, et al. (1997). 6p24-22 region and major psychoses in the Eastern Quebec population. Le Groupe IREP. *Am J Med Genet* 74, 311-318.
- Maziade M, Roy MA, Rouillard E, Bissonnette L, Fournier JP, Roy A, Garneau Y, Montgrain N, Potvin A, Cliche D, et al. (2001). A search for specific and common susceptibility loci for schizophrenia and bipolar disorder: a linkage study in 13 target chromosomes. *Mol Psychiatry* 6, 684-693.
- McCarley RW, Wible CG, Frumin M, Hirayasu Y, Levitt JJ, Fischer IA, Shenton ME. (1999). MRI anatomy of schizophrenia. *Biol Psychiatry* 45, 1099-1119.
- Mein CA, Barratt BJ, Dunn MG, Siegmund T, Smith AN, Esposito L, Nutland S, Stevens HE, Wilson AJ, Phillips MS, et al. (2000). Evaluation of single nucleotide polymorphism typing with invader on PCR amplicons and its automation. *Genome Res* 10, 330-343.
- Meira-Lima IV, Pereira AC, Mota GF, Floriano M, Araujo F, Mansur AJ, Krieger JE, Vallada H. (2003). Analysis of a polymorphism in the promoter region of the tumor necrosis factor alpha gene in schizophrenia and bipolar disorder: further support for an association with schizophrenia. *Mol Psychiatry* 8, 718-720.
- Michalatos-Beloin S, Tishkoff SA, Bentley KL, Kidd KK, Ruano G. (1996). Molecular haplotyping of genetic markers 10 kb apart by allele-specific long-range PCR. *Nucleic Acids Res* 24, 4841-4843.
- Miller SA, Dykes DD, Polesky HF. (1988). A simple salting out procedure for extracting DNA from human nucleated cells. *Nucleic Acids Res* 16, 1215.
- Mimmack ML, Ryan M, Baba H, Navarro-Ruiz J, Iritani S, Faull RL, McKenna PJ, Jones PB, Arai H, Starkey M, et al. (2002). Gene expression analysis in schizophrenia:

reproducible up-regulation of several members of the apolipoprotein L family located in a high-susceptibility locus for schizophrenia on chromosome 22. *Proc Natl Acad Sci USA* 99, 4680-4685.

Mirnics K, Middleton FA, Marquez A, Lewis DA, Levitt P. (2000). Molecular characterization of schizophrenia viewed by microarray analysis of gene expression in prefrontal cortex. *Neuron* 28, 53-67.

Mohan RR, Mohan RR, Wilson SE. (2001). Discoidin domain receptor (DDR) 1 and 2: collagen-activated tyrosine kinase receptors in the cornea. *Exp Eye Res* 72, 87-92.

Moises HW, Yang L, Kristbjarnarson H, Wiese C, Byerley W, Macciardi F, Arolt V, Blackwood D, Liu X, Sjogren B, et al. (1995). An international two-stage genome-wide search for schizophrenia susceptibility genes. *Nat Genet* 11, 321-324.

Moises HWM. (2001). Human Genome data analyzed by an evolutionary method suggests a decrease in protein-synthesis rate as cause of schizophrenia and an increase as antipsychotic mechanism. [<http://xxx.arxiv.cornell.edu/abs/cond-mat/0110189>] *ArXiv.org e-Print archive*.

Moises HW, Zoega T, Gottesman II. (2002). The glial growth factors efficiency and synaptic destabilization hypothesis of schizophrenia. *BMC Psychiatry* 2, 8-20.

Morton NE, Collins A. (1998). Tests and estimates of allelic association in complex inheritance. *Proc Natl Acad Sci USA* 95, 11389-11393.

Murphy KC, Jones LA, Owen MJ. (1999). High rates of schizophrenia in adults with velo-cardio-facial syndrome. *Arch Gen Psychiatry* 56, 940-945.

Murphy KC. (2002). Schizophrenia and velo-cardio-facial syndrome. *Lancet* 359, 426-430.

Myles-Worsley M, Coon H, McDowell J, Brenner C, Hoff M, Lind B, Bennett P, Freedman R, Clementz B, Byerley W. (1999). Linkage of a composite inhibitory phenotype to a chromosome 22q locus in eight Utah families. *Am J Med Genet* 88, 544-550.

Nakayama EE, Wasi C, Ajisawa A, Iwamoto A, Shioda T. (1996). A new polymorphism in the promoter region of the human interleukin-16 (IL-16) gene. *Genes Immun* 1, 293-294.

Namekata K, Oyama F, Imagawa M, Ihara Y. Human transferrin (Tf): a single mutation at codon 570 determines Tf C1 or Tf C2 variant. (1997). *Hum Genet* 100, 457-458.

Nemoto T, Ohashi K, Akashi T, Johnson JD, Hirokawa K. (1997). Overexpression of protein tyrosine kinases in human esophageal cancer. *Pathobiology* 65, 195-203.

Nevilie M, Selzer R, Aizenstein B, Maguire M, Hogan K, Walton R, Welsh K, Neri B, de Arruda M. (2002). Characterization of cytochrome P450 2D6 alleles using the Invader system. *Biotechniques Suppl*: 34-8, 40-43.

Newton CR, Graham A, Heptinstall LE, Powell SJ, Summers C, Kalsheker N, Smith JC, Markham AF. (1989). Analysis of any point mutation in DNA. The amplification refractory mutation system (ARMS). *Nucleic Acids Res* 17, 2503-2516.

- Nikiforov TT, Rendle RB, Goelet P, Rogers YH, Kotewicz ML, Anderson S, Trainor GL, Knapp MR. (1994). Genetic Bit Analysis: a solid phase method for typing single nucleotide polymorphisms. *Nucleic Acids Res* 22, 4167-4175.
- Nilsson M, Malmgren H, Samiotaki M, Kwiatkowski M, Chowdhary BP, Landegren U. (1994). Padlock probes: circularizing oligonucleotides for localized DNA detection. *Science* 265, 2085-2088.
- Nopoulos P, Torres I, Flaum M, Andreasen NC, Ehrhardt JC, Yuh WT. (1995). Brain morphology in first-episode schizophrenia. *Am J Psychiatry* 152, 1721-1723.
- Nyren P, Pettersson B, Uhlen M. (1993). Solid phase DNA minisequencing by an enzymatic luminometric inorganic pyrophosphate detection assay. *Anal Biochem* 208, 171-175.
- Ohnishi Y, Tanaka T, Ozaki K, Yamada R, Suzuki H, Nakamura Y. (2001). A high-throughput SNP typing system for genome-wide association studies. *J Hum Genet* 46, 471-477.
- Okayama H, Curiel DT, Brantly ML, Holmes MD, Crystal RG. (1989). Rapid, nonradioactive detection of mutations in the human genome by allele-specific amplification. *J Lab Clin Med* 114, 105-113.
- Olaso E, Ikeda K, Eng FJ, Xu L, Wang LH, Lin HC, Friedman SL. (2001). DDR2 receptor promotes MMP-2-mediated proliferation and invasion by hepatic stellate cells. *J Clin Invest* 108, 1369-1378.
- Olivier M, Chuang LM, Chang MS, Chen YT, Pei D, Ranade K, de Witte A, Allen J, Tran N, Curb D, et al. (2002). High-throughput genotyping of single nucleotide polymorphisms using new biplex invader technology. *Nucleic Acids Res* 30, e53.
- Ongusaha PP, Kim JI, Fang L, Wong TW, Yancopoulos GD, Aaronson SA, Lee SW. (2003). p53 induction and activation of DDR1 kinase counteract p53-mediated apoptosis and influence p53 regulation through a positive feedback loop. *EMBO J* 22, 1289-1301.
- Onstad S, Skre I, Torgersen S, Kringlen E. (1991). Twin concordance for DSM-III-R schizophrenia. *Acta Psychiatr Scand* 83, 395-401.
- Orum H, Jakobsen MH, Koch T, Vuust J, Borre MB. (1999). Detection of the factor V Leiden mutation by direct allele-specific hybridization of PCR amplicons to photoimmobilized locked nucleic acids. *Clin Chem* 45, 1898-1905.
- Owen F, Simpson M. (1994). The neurochemistry of schizophrenia. *Mol Cell Biol Hum Dis Ser* 4, 133-159.
- Palko ME, Coppola V, Tessarollo L. (1999). Evidence for a role of truncated trkB receptor isoforms in mouse development. *J Neurosci* 19, 775-782.
- Palmer AA, Breen LL, Flodman P, Conti LH, Spence MA, Printz MP. (2003). Identification of quantitative trait loci for prepulse inhibition in rats. *Psychopharmacology* 165, 270-279.
- Pastinen T, Kurg A, Metspalu A, Peltonen L, Syvanen AC. (1997). Minisequencing: a specific tool for DNA analysis and diagnostics on oligonucleotide arrays. *Genome Res* 7, 606-614.

- Paunio T, Ekelund J, Varilo T, Parker A, Hovatta I, Turunen JA, Rinard K, Foti A, Terwilliger JD, Juvonen H, et al. (2001). Genome-wide scan in a nationwide study sample of schizophrenia families in Finland reveals susceptibility loci on chromosomes 2q and 5q. *Hum Mol Genet* 10, 3037-3048.
- Paus T, Zijdenbos A, Worsley K, Collins DL, Blumenthal J, Giedd JN, Rapoport JL, Evans AC. (1999). Structural maturation of neural pathways in children and adolescents: in vivo study. *Science* 283, 1908-1911.
- Pearlson GD, Marsh L. (1999). Structural brain imaging in schizophrenia: a selective review. *Biol Psychiatry* 46, 627-49.
- Peles E, Nativ M, Lustig M, Grumet M, Schilling J, Martinez R, Plowman GD, Schlessinger J. (1997). Identification of a novel contactin-associated transmembrane receptor with multiple domains implicated in protein-protein interactions. *EMBO J* 16, 978-988.
- Perez JL, Jing SQ, Wong TW. (1996). Identification of two isoforms of the Cak receptor kinase that are coexpressed in breast tumor cell lines. *Oncogene* 12, 1469-1477.
- Pettegrew JW, Keshavan MS, Panchalingam K, Strychor S, Kaplan DB, Tretta MG, Allen M. (1991). Alterations in brain high-energy phosphate and membrane phospholipid metabolism in first-episode, drug-naïve schizophrenics. A pilot study of the dorsal prefrontal cortex by in vivo phosphorus 31 nuclear magnetic resonance spectroscopy. *Arch Gen Psychiatry* 48, 563-568.
- Playford MP, Butler RJ, Wang XC, Katso RM, Cooke IE, Ganesan TS. (1996). The genomic structure of discoidin receptor tyrosine kinase. *Genome Res* 6, 620-627.
- Pomeroy SL, Tamayo P, Gaasenbeek M, Sturla LM, Angelo M, McLaughlin ME, Kim JY, Goumnerova LC, Black PM, Lau C, et al. (2002). Prediction of central nervous system embryonal tumour outcome based on gene expression. *Nature* 415, 436-442.
- Poort SR, Rosendaal FR, Reitsma PH, Bertina RM. (1996). A common genetic variation in the 3'-untranslated region of the prothrombin gene is associated with elevated plasma prothrombin levels and an increase in venous thrombosis. *Blood* 88, 3698-3703.
- Prince JA, Feuk L, Howell WM, Jobs M, Emahazion T, Blennow K, Brookes AJ. (2001). Robust and accurate single nucleotide polymorphism genotyping by dynamic allele-specific hybridization (DASH): design criteria and assay validation. *Genome Res* 11, 152-162.
- Pritchard JK, Rosenberg NA. (1999). Use of unlinked genetic markers to detect population stratification in association studies. *Am J Hum Genet* 65, 220-228.
- Pritchard JK, Stephens M, Rosenberg NA, Donnelly P. (2000). Association mapping in structured populations. *Am J Hum Genet* 67, 170-1781.
- Pulver AE, Lasseter VK, Kasch L, Wolyniec P, Nestadt G, Blouin JL, Kimberland M, Babb R, Vourlis S, Chen H, et al. (1995). Schizophrenia: a genome scan targets chromosomes 3p and 8p as potential sites of susceptibility genes. *Am J Med Genet* 60, 252-260.
- Reese MG, Eckman FH, Kulp D, Haussler D. (1997). Improved splice site detection in Genie. *J Comput Biol* 4, 311-323.

- Reich DE, Gabriel SB, Altshuler D. (2003). Quality and completeness of SNP databases. *Nat Genet* 33, 457-8.
- Risch N, Merikangas K. (1996). The future of genetic studies of complex human diseases. *Science* 273, 1516-1527.
- Ross PL, Lee K, Belgrader P. (1997). Discrimination of single-nucleotide polymorphisms in human DNA using peptide nucleic acid probes detected by MALDI-TOF mass spectrometry. *Anal Chem* 69, 4197-4202.
- Rothermundt M, Missler U, Arolt V, Peters M, Leadbeater J, Wiesmann M, Rudolf S, Wandinger KP, Kirchner H. (2001). Increased S100B blood levels in unmedicated and treated schizophrenic patients are correlated with negative symptomatology. *Mol Psychiatry* 6, 445-459.
- Rovin BH, Lu L, Saxena R. A novel polymorphism in the MCP-1 gene regulatory region that influences MCP-1 expression. (1999). *Biochem Biophys Res Commun* 259, 344-348.
- Rozen S, Skaletsky H. (2000). Primer3 on the WWW for general users and for biologist programmers. *Methods Mol Biol* 132, 365-386.
- Rudin E. (1916). Zur Vererbung und Neuentslehung der dementia praecox. Berlin: Springer.
- Ruvkun G, Hobert O. (1998). The taxonomy of developmental control in *Caenorhabditis elegans*. *Science* 282, 2033-2041.
- Ryan D, Nuccie B, Arvan D. (1999). Non-PCR-dependent detection of the factor V Leiden mutation from genomic DNA using a homogeneous invader microtiter plate assay. *Mol Diagn* 4, 135-144.
- Sachidanandam R, Weissman D, Schmidt SC, Kakol JM, Stein LD, Marth G, Sherry S, Mullikin JC, Mortimore BJ, Willey DL, et al. (2001). A map of human genome sequence variation containing 1.42 million single nucleotide polymorphisms. *Nature* 409, 928-933.
- Saiki RK, Walsh PS, Levenson CH, Erlich HA. (1989). Genetic analysis of amplified DNA with immobilized sequence-specific oligonucleotide probes. *Proc Natl Acad Sci USA* 86, 6230-6234.
- Sakamoto O, Suga M, Suda T, Ando M. (2001). Expression of discoidin domain receptor 1 tyrosine kinase on the human bronchial epithelium. *Eur Respir J* 17, 969-974.
- Sakuma S, Saya H, Tada M, Nakao M, Fujiwara T, Roth JA, Sawamura Y, Shinohe Y, Abe H. (1996). Receptor protein tyrosine kinase DDR is up-regulated by p53 protein. *FEBS Lett* 398, 165-169.
- Sanchez MP, Tapley P, Saini SS, He B, Pulido D, Barbacid M. (1994). Multiple tyrosine protein kinases in rat hippocampal neurons: isolation of Ptk-3, a receptor expressed in proliferative zones of the developing brain. *Proc Natl Acad Sci USA* 91, 1819-1823.
- Sanchez-Cespedes M, Cairns P, Jen J, Sidransky D. (1998). Degenerate oligonucleotide-primed PCR (DOP-PCR): evaluation of its reliability for screening of genetic alterations in neoplasia. *Biotechniques* 25, 1036-1038.

- Sauer CG, Gehrig A, Warneke-Wittstock R, Marquardt A, Ewing CC, Gibson A, Lorenz B, Jurklies B, Weber BH. (1997). Positional cloning of the gene associated with X-linked juvenile retinoschisis. *Nat Genet* 17, 164-170.
- Schneider S, Roessli D, Excoffier L. (2000) Arlequin: A software for population genetics data analysis. Ver 2.000. Genetics and Biometry Lab, Dept. of Anthropology, University of Geneva.
- Sham P, Bader JS, Craig I, O'Donovan M, Owen M. (2002). DNA Pooling: a tool for large-scale association studies. *Nat Rev Genet* 3, 862-871.
- Schizophrenia Linkage Collaborative Group for Chromosomes 3, 6 and 8. (1996). Additional support for schizophrenia linkage on chromosomes 6 and 8: a multicenter study. *Am J Med Genet* 67, 580-594.
- Schultz SK, Andreasen NC. Schizophrenia. (1999). *Lancet* 353, 1425-1430.
- Schwab SG, Albus M, Hallmayer J, Honig S, Borrmann M, Lichtermann D, Ebstein RP, Ackeheil M, Lerer B, Risch N, et al. (1995). Evaluation of a susceptibility gene for schizophrenia on chromosome 6p by multipoint affected sib-pair linkage analysis. *Nat Genet* 11, 325-327.
- Schwab SG, Hallmayer J, Albus M, Lerer B, Eckstein GN, Borrmann M, Segman RH, Hanses C, Freymann J, Yakir A, et al. (2000). A genome-wide autosomal screen for schizophrenia susceptibility loci in 71 families with affected siblings: support for loci on chromosome 10p and 6. *Mol Psychiatry* 5, 638-649.
- Schwab SG, Hallmayer J, Freimann J, Lerer B, Albus M, Borrmann-Hassenbach M, Segman RH, Trixler M, Rietschel M, Maier W, et al. (2002). Investigation of linkage and association/linkage disequilibrium of HLA A-, DQA1-, DQB1-, and DRB1-alleles in 69 sib-pair- and 89 trio-families with schizophrenia. *Am J Med Genet* 114, 315-320.
- Schwab SG, Knapp M, Mondabon S, Hallmayer J, Borrmann-Hassenbach M, Albus M, Lerer B, Rietschel M, Trixler M, Maier W, et al. (2003). Support for association of schizophrenia with genetic variation in the 6p22.3 gene, dysbindin, in sib-pair families with linkage and in an additional sample of triad families. *Am J Hum Genet* 72, 185-190.
- Seidman LJ, Faraone SV, Goldstein JM, Kremen WS, Horton NJ, Makris N, Toomey R, Kennedy D, Caviness VS, Tsuang MT. (2002). Left hippocampal volume as a vulnerability indicator for schizophrenia: a magnetic resonance imaging morphometric study of nonpsychotic first-degree relatives. *Arch Gen Psychiatry* 59, 839-849.
- Sham P, Bader JS, Craig I, O'Donovan M, Owen M. (2002). DNA Pooling: a tool for large-scale association studies. *Nat Rev Genet* 3, 862-871.
- Shrivastava A, Radziejewski C, Campbell E, Kovac L, McGlynn M, Ryan TE, Davis S, Goldfarb MP, Glass DJ, Lemke G, et al. (1997). An orphan receptor tyrosine kinase family whose members serve as nonintegrin collagen receptors. *Mol Cell* 1, 25-34.
- Singh S. (2000). Nucleic acid detection using degradation of a tagged sequence. USPTO 6,514,700.
- Smith HO, Wilcox KW. (1970). A restriction enzyme from *Hemophilus influenzae*. I. Purification and general properties. *J Mol Biol* 51, 379-391.

- Smythies JR. (1983). The transmethylation and one-carbon cycle hypotheses of schizophrenia. *Psychol Med* 13, 711-714.
- Sommer SS, Cassady JD, Sobell JL, Bottema CD. (1989). A novel method for detecting point mutations or polymorphisms and its application to population screening for carriers of phenylketonuria. *Mayo Clin Proc* 64, 1361-1372.
- Staal WG, Hulshoff Pol HE, Schnack HG, Hoogendoorn ML, Jellema K, Kahn RS. (2000). Structural brain abnormalities in patients with schizophrenia and their healthy siblings. *Am J Psychiatry* 157, 416-421.
- Stefansson H, Sigurdsson E, Steinthorsdottir V, Bjornsdottir S, Sigmundsson T, Ghosh S, Brynjolfsson J, Gunnarsdottir S, Ivarsson O, Chou TT, et al. (2002). Neuregulin 1 and susceptibility to schizophrenia. *Am J Hum Genet* 71, 877-892.
- Stephens M, Smith NJ, Donnelly P. (2001). A new statistical method for haplotype reconstruction from population data. *Am J Hum Genet* 68, 978-989.
- Straub RE, MacLean CJ, O'Neill FA, Burke J, Murphy B, Duke F, Shinkwin R, Webb BT, Zhang J, Walsh D, et al. (1995). A potential vulnerability locus for schizophrenia on chromosome 6p24-22: evidence for genetic heterogeneity. *Nat Genet* 11, 287-293.
- Straub RE, MacLean CJ, Ma Y, Webb BT, Myakishev MV, Harris-Kerr C, Wormley B, Sadek H, Kadambi B, O'Neill FA, et al. (2002). Genome-wide scans of three independent sets of 90 Irish multiplex schizophrenia families and follow-up of selected regions in all families provides evidence for multiple susceptibility genes. *Mol Psychiatry* 7, 542-559.
- Straub RE, Jiang Y, MacLean CJ, Ma Y, Webb BT, Myakishev MV, Harris-Kerr C, Wormley B, Sadek H, Kadambi B, et al. (2002b). Genetic variation in the 6p22.3 gene DTNBP1, the human ortholog of the mouse dysbindin gene, is associated with schizophrenia. *Am J Hum Genet* 71, 337-348.
- Syvänen AC, Aalto-Setala K, Harju L, Kontula K, Soderlund H. (1990). A primer-guided nucleotide incorporation assay in the genotyping of apolipoprotein E. *Genomics* 8, 684-692.
- Syvänen AC. (1999). From gels to chips: "minisequencing" primer extension for analysis of point mutations and single nucleotide polymorphisms. *Hum Mutat* 13, 1-10.
- Taillon-Miller P, Piernot EE, Kwok PY. (1999). Efficient approach to unique single-nucleotide polymorphism discovery. *Genome Res* 9, 499-505.
- Talbot K, Eidem WL, Tinsley CL, Benson MA, Thompson EW, Smith RJ, Hahn CG, Siegel SJ, Trojanowski JQ, Gur RE, et al. (2004). Dysbindin-1 is reduced in intrinsic, glutamatergic terminals of the hippocampal formation in schizophrenia. *J Clin Invest* 113, 1353-1363.
- Talmud PJ, Hawe E, Robertson K, Miller GJ, Miller NE, Humphries SE. (2002). Genetic and environmental determinants of plasma high density lipoprotein cholesterol and apolipoprotein AI concentrations in healthy middle-aged men. *Ann Hum Genet* 66, 111-124.
- Tang JX, Zhou J, Fan JB, Li XW, Shi YY, Gu NF, Feng GY, Xing YL, Shi JG, He L. (2003). Family-based association study of DTNBP1 in 6p22.3 and schizophrenia. *Mol Psychiatry* 8, 717-718.

- Terwilliger JD, Weiss KM. (1998). Linkage disequilibrium mapping of complex disease: fantasy or reality? *Curr Opin Biotechnol* 9, 578-594.
- The international classification of diseases. 9th revision, clinical modification; ICD-9-CM. (1979). Geneva, Switzerland: World Health Organization.
- The MHC sequencing consortium. (1999). Complete sequence and gene map of a human major histocompatibility complex. The MHC sequencing consortium. *Nature* 401, 921-923.
- The Retinoschisis Consortium. (1998). Functional implications of the spectrum of mutations found in 234 cases with X-linked juvenile retinoschisis. The Retinoschisis Consortium. *Hum Mol Genet* 7, 1185-1192.
- Tkachev D, Mimmack ML, Ryan MM, Wayland M, Freeman T, Jones PB, Starkey M, Webster MJ, Yolken RH, Bahn S. (2003). Oligodendrocyte dysfunction in schizophrenia and bipolar disorder. *Lancet* 362, 798-805.
- Torrey EF, Peterson MR. (1976). The viral hypothesis of schizophrenia. *Schizophr Bull* 2, 136-146.
- Tsai MT, Su YC, Chen YH, Chen CH. (2001). Lack of evidence to support the association of the human prion gene with schizophrenia. *Mol Psychiatry* 6, 74-78.
- Tsuang MT, Lyons MJ, Faraone SV. (1990). Heterogeneity of schizophrenia. Conceptual models and analytic strategies. *Br J Psychiatry* 156, 17-26.
- Turki J, Pak J, Green SA, Martin RJ, Liggett SB. (1995). Genetic polymorphisms of the beta-2-adrenergic receptor in nocturnal and nonnocturnal asthma: evidence that gly16 correlates with the nocturnal phenotype. *J Clin Invest* 95, 1635-1641.
- Tyagi S, Kramer FR. (1996). Molecular beacons: probes that fluoresce upon hybridization. *Nat Biotechnol* 14, 303-308.
- Tyagi S, Bratu DP, Kramer FR. (1998). Multicolor molecular beacons for allele discrimination. *Nat Biotechnol* 16, 49-53.
- Uranova N, Orlovskaya D, Vikhreva O, Zimina I, Kolomeets N, Vostrikov V, Rachmanova V. (2001). Electron microscopy of oligodendroglia in severe mental illness. *Brain Res Bull* 55, 597-610.
- Uranova NA, Vostrikov VM, Orlovskaya DD, Rachmanova VI. (2004). Oligodendroglial density in the prefrontal cortex in schizophrenia and mood disorders: a study from the Stanley Neuropathology Consortium. *Schizophr Res* 67, 269-275.
- Valent A, Meddeb M, Danglot G, Duverger A, Nguyen VC, Bernheim A. (1996). Assignment of the NTRK4 (trkE) gene to chromosome 6p21. *Hum Genet* 98, 12-15.
- Van Den Bogaert A, Schumacher J, Schulze TG, Otte AC, Ohlraun S, Kovalenko S, Becker T, Freudenberg J, Jonsson EG, Mattila-Evenden M, et al. (2003). The DTNB1 (dysbindin) gene contributes to schizophrenia, depending on family history of the disease. *Am J Hum Genet* 73, 1438-1443.
- van den Oord EJ, Sullivan PF, Jiang Y, Walsh D, O'Neill FA, Kendler KS, Riley BP. (2003). Identification of a high-risk haplotype for the dystrobrevin binding protein

- 1 (DTNBP1) gene in the Irish study of high-density schizophrenia families. *Mol Psychiatry* 8, 499-510.
- van Eijk MJ, Broekhof JL, van der Poel HJ, Hogers RC, Schneiders H, Kamerbeek J, Verstege E, van Aart JW, Geerlings H, Buntjer JB, et al. (2004). SNPWave: a flexible multiplexed SNP genotyping technology. *Nucleic Acids Res* 32, e47.
- Vawter MP, Crook JM, Hyde TM, Kleinman JE, Weinberger DR, Becker KG, Freed WJ. (2002). Microarray analysis of gene expression in the prefrontal cortex in schizophrenia: a preliminary study. *Schizophr Res* 58, 11-20.
- Virgos C, Martorell L, Simo JM, Valero J, Figuera L, Joven J, Labad A, Vilella E. (1999). Plasma homocysteine and the methylenetetrahydrofolate reductase C677T gene variant: lack of association with schizophrenia. *Neuroreport* 10, 2035-2038.
- Virgos C, Martorell L, Valero J, Figuera L, Civeira F, Joven J, Labad A, Vilella E. (2001). Association study of schizophrenia with polymorphisms at six candidate genes. *Schizophr Res* 49, 65-71.
- Virgos C, Cronin MT. (2002). Universal e-Tag primer compositions and methods. PCT/US02/32867 (*pendent*).
- Vogel W, Gish GD, Alves F, Pawson T. (1997). The discoidin domain receptor tyrosine kinases are activated by collagen. *Mol Cell* 1, 13-23.
- Vogel W. (1999). Discoidin domain receptors: structural relations and functional implications. *FASEB J* 13, S77-S82.
- Vogel W, Brakebusch C, Fassler R, Alves F, Ruggiero F, Pawson T. (2000). Discoidin domain receptor 1 is activated independently of beta(1) integrin. *J Biol Chem* 275, 5779-5784.
- Vogel WF, Aszodi A, Alves F, Pawson T. (2001). Discoidin domain receptor 1 tyrosine kinase has an essential role in mammary gland development. *Mol Cell Biol* 21, 2906-2917.
- Vogel WF. (2001). Collagen-receptor signaling in health and disease. *Eur J Dermatol* 11, 506-514.
- Vogel WF. (2002). Ligand-induced shedding of discoidin domain receptor 1. *FEBS Lett* 514, 175-180.
- Vohl MC, Lepage P, Gaudet D, Brewer CG, Betard C, Perron P, Houde G, Cellier C, Faith JM, Despres JP, et al. (2000). Molecular scanning of the human PPAR α gene: association of the L162v mutation with hyperapobetalipoproteinemia. *J Lipid Res* 41, 945-952.
- Wang S, Sun CE, Walczak CA, Ziegler JS, Kipps BR, Goldin LR, Diehl SR. (1995). Evidence for a susceptibility locus for schizophrenia on chromosome 6pter-p22. *Nat Genet* 10, 41-46.
- Wang S, Detera-Wadleigh SD, Coon H, Sun CE, Goldin LR, Duffy DL, Byerley WF, Gershon ES, Diehl SR. (1996). Evidence of linkage disequilibrium between schizophrenia and the SCa1 CAG repeat on chromosome 6p23. *Am J Hum Genet* 59, 731-736.

- Wang DG, Fan JB, Siao CJ, Berno A, Young P, Sapolisky R, Ghandour G, Perkins N, Winchester E, Spencer J. (1998). Large-scale identification, mapping, and genotyping of single-nucleotide polymorphisms in the human genome. *Science* 280, 1077-1082.
- Weber JL, Wong C. (1993). Mutation of human short tandem repeats. *Hum Mol Genet* 2, 1123-1238.
- Wei J, Hemmings GP. (2000). The NOTCH4 locus is associated with susceptibility to schizophrenia. *Nat Genet* 25, 376-377.
- Weinberger DR. (1987). Implications of normal brain development for the pathogenesis of schizophrenia. *Arch Gen Psychiatry* 44, 660-669.
- Weinberger DR. (1995). Schizophrenia as a neurodevelopment disorder. In Hirsch SR I Weinberger DR eds: *Schizophrenia*. Oxford: Blackwell Science Ltd, 293-323.
- Weiner HL, Rothman M, Miller DC, Ziff EB. (1996). Pediatric brain tumors express multiple receptor tyrosine kinases including novel cell adhesion kinases. *Pediatr Neurosurg* 25, 64-71.
- Weiner HL, Huang H, Zagzag D, Boyce H, Lichtenbaum R, Ziff EB. (2000). Consistent and selective expression of the discoidin domain receptor-1 tyrosine kinase in human brain tumors. *Neurosurgery* 47, 1400-1409.
- Weisberg I, Tran P, Christensen B, Sibani S, Rozen R. (1998). A second genetic polymorphism in methylenetetrahydrofolate reductase (MTHFR) associated with decreased enzyme activity. *Mol Genet Metab* 64, 169-172.
- Williams NM, Rees MI, Holmans P, Norton N, Cardno AG, Jones LA, Murphy KC, Sanders RD, McCarthy G, Gray MY, et al. (1999). A two-stage genome scan for schizophrenia susceptibility genes in 196 affected sibling pairs. *Hum Mol Genet* 8, 1729-1739.
- Williams NM, Preece A, Morris DW, Spurlock G, Bray NJ, Stephens M, Norton N, Williams H, Clement M, Dwyer S, et al. (2004). Identification in 2 independent samples of a novel schizophrenia risk haplotype of the dystrobrevin binding protein gene (DTNBP1). *Arch Gen Psychiatry* 61, 336-344.
- Wolford JK, Blunt D, Ballecer C, Prochazka M. (2000). High-throughput SNP detection by using DNA pooling and denaturing high performance liquid chromatography (DHPLC). *Hum Genet* 107, 483-487.
- Wright IC, Rabe-Hesketh S, Woodruff PW, David AS, Murray RM, Bullmore ET. (2000). Meta-analysis of regional brain volumes in schizophrenia. *Am J Psychiatry* 157, 16-25.
- Wu DY, Ugozzoli L, Pal BK, Wallace RB. (1989). Allele-specific enzymatic amplification of beta-globin genomic DNA for diagnosis of sickle cell anemia. *Proc Natl Acad Sci USA* 86, 2757-2760.
- Wu DY, Wallace RB. (1989). The ligation amplification reaction (LAR)--amplification of specific DNA sequences using sequential rounds of template-dependent ligation. *Genomics* 4, 560-569.
- Yen CJ, Beamer BA, Negri C, Silver K, Brown KA, Yarnall DP, Burns DK, Roth J, Shuldiner AR. (1997). Molecular scanning of the human peroxisome proliferator activated receptor gamma (hPPAR gamma) gene in diabetic Caucasians:

identification of a Pro12Ala PPAR gamma 2 missense mutation. *Biochem Biophys Res Commun* 241, 270-274.

Zerlin M, Julius MA, Goldfarb M. (1993). NEP: a novel receptor-like tyrosine kinase expressed in proliferating neuroepithelia. *Oncogene* 8, 2731-2739.

Referències i informació de base de dades electròniques

Breast Cancer Information Core (BIC)

Es pot trobar a la direcció URL: <http://research.nhgri.nih.gov/bic/>
Emprada per la identificació de SNPs en el gen BRCA1.

dbSNP

Es pot trobar a la direcció URL: <http://www.ncbi.nlm.nih.gov/SNP/index.html>
Emprada per la identificació de SNPs en els gens DDR1 i GTFH4.

Online Mendelian Inheritance in Man (OMIM)

Es pot trobar a la direcció URL:
<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM>

Vertebrate Genome Annotation (VEGA) database

Es pot trobar a la direcció URL: <http://vega.sanger.ac.uk/>
Emprada per la anotació de SNPs en el gen DDR1.