

VII. Anhang

7.1 Literaturverzeichnis

Akiyama Y., Radtke C., and Kocsis J.D. (2002). "Remyelination of the rat spinal cord by transplantation of identified bone marrow stromal cells." *J Neurosci* 22, 6623-6630.

Alberga A., Boulay J.L., Kempe E., Dennefeld C., and Haenlin M. (1991). "The snail gene required for mesoderm formation in *Drosophila* is expressed dynamically in derivatives of all three germ layers." *Development* 111, 983-992.

Alberts B., Bray D., Lewis J., Raff M., Roberts K., Watson J.D. (1994) "Molecular Biology of the Cell" 3rd Edition, Garland Publishing, New York and London.

Alberts B., Johnson A., Lewis J., Raff M., Roberts K., Walter P. (2002) "Molecular Biology of the Cell" 4th Edition, Garland Publishing, New York and London.

Alizadeh A., Eisen M., Botstein D., Brown P.O., Staudt L.M. (1998) "Probing lymphocyte biology by genomic-scale gene expression analysis." *J Clin Immunol* 18(6). 373-379.

Allen R.G., and Tresini M. (2000). "Oxidative stress and gene regulation." *Free Radic Biol Med* 28, 463-499.

Alliot F., Rutin J., Leenen P.J., and Pessac B. (1999). "Pericytes and periendothelial cells of brain parenchyma vessels co-express aminopeptidase N, aminopeptidase A, and nestin." *J Neurosci Res* 58, 367-378.

Allt G., and Lawrenson J.G. (2001). "Pericytes: cell biology and pathology." *Cells Tissues Organs* 169, 1-11.

Al-Madhoun A.S., Tjarks W., and Eriksson S. (2004). "The role of thymidine kinases in the activation of pyrimidine nucleoside analogues." *Mini Rev Med Chem* 4, 341-350.

Altman J. (1969). "Autoradiographic and histological studies of postnatal neurogenesis. IV. Cell proliferation and migration in the anterior forebrain, with special reference to persisting neurogenesis in the olfactory bulb." *J Comp Neurol* 137, 433-457.

Alvarez-Dolado M., Pardal R., Garcia-Verdugo J.M., Fike J.R., Lee H.O., Pfeffer K., Lois C., Morrison S.J., and Alvarez-Buylla A. (2003). "Fusion of bone-marrow-derived cells with Purkinje neurons, cardiomyocytes and hepatocytes." *Nature* 425, 968-973.

Andersson U., and Tracey K.J. (2003). "HMGB1 in sepsis." *Scand J Infect Dis* 35, 577-584.

Anisimov S.V., Tarasov K.V., Tweedie D., Stern M.D., Wobus A.M., and Boheler K.R. (2002). "SAGE identification of gene transcripts with profiles unique to pluripotent mouse R1 embryonic stem cells." *Genomics* 79, 169-176.

Anthony T.E., Klein C., Fishell G., and Heintz N. (2004). "Radial glia serve as neuronal progenitors in all regions of the central nervous system." *Neuron* 41, 881-890.

Ayad N.G., Rankin S., Murakami M., Jebanathirajah J., Gygi S., and Kirschner M.W. (2003). "Tome-1, a trigger of mitotic entry, is degraded during G1 via the APC." *Cell* 113, 101-113.

Aybar M.J., Nieto M.A., and Mayor R. (2003). "Snail precedes slug in the genetic cascade required for the specification and migration of the *Xenopus* neural crest." *Development* 130, 483-494.

Azizi S.A., Stokes D., Augelli B.J., DiGirolamo C., and Prockop D.J. (1998). "Engraftment and migration of human bone marrow stromal cells implanted in the brains of albino rats--similarities to astrocyte grafts." *Proc Natl Acad Sci U S A* 95, 3908-3913.

Bain G., Kitchens D., Yao M., Huettner J.E., and Gottlieb D.I. (1995). "Embryonic stem cells express neuronal properties in vitro." *Dev Biol* 168, 342-357.

Baizabal J.M., Furlan-Magaril M., Santa-Olalla J., and Covarrubias L. (2003). "Neural stem cells in development and regenerative medicine." *Arch Med Res* 34, 572-588.

Balabanov R., and Dore-Duffy P. (1998). "Role of the CNS microvascular pericyte in the blood-brain barrier." *J Neurosci Res* 53, 637-644.

Balint E., Lapointe D., Drissi H., van der Meijden C., Young D.W., van Wijnen A.J., Stein J.L., Stein G.S., and Lian J.B. (2003). "Phenotype discovery by gene expression profiling: mapping of biological processes linked to BMP-2-mediated osteoblast differentiation." *J Cell Biochem* 89, 401-426.

Barembaum M., Moreno T.A., LaBonne C., Sechrist J., and Bronner-Fraser M. (2000). "Noelin-1 is a secreted glycoprotein involved in generation of the neural crest." *Nat Cell Biol* 2, 219-225.

Beauchamp J.R., Heslop L., Yu D.S., Tajbakhsh S., Kelly R.G., Wernig A., Buckingham M.E., Partridge T.A., and Zammit P.S. (2000). "Expression of CD34 and Myf5 defines the majority of quiescent adult skeletal muscle satellite cells." *J Cell Biol* 151, 1221-1234.

Benezra R., and Rafii S. (2004). "Endostatin's endpoints-Deciphering the endostatin antiangiogenic pathway." *Cancer Cell* 5, 205-206.

Benson D.L., Mandell J.W., Shaw G., and Banker G. (1996). "Compartmentation of alpha-internexin and neurofilament triplet proteins in cultured hippocampal neurons." *J Neurocytol* 25, 181-196.

Bezakova G., and Ruegg M.A. (2003). "New insights into the roles of agrin." *Nat Rev Mol Cell Biol* 4, 295-308.

Bianchi M.E., and Beltrame M. (2000). "Upwardly mobile proteins. Workshop: the role of HMG proteins in chromatin structure, gene expression and neoplasia." *EMBO Rep* 1, 109-114.

Bianco P., and Gehron Robey P. (2000). "Marrow stromal stem cells." *J Clin Invest* 105, 1663-1668.

Bianco P., Riminucci M., Gronthos S., and Robey P.G. (2001). "Bone marrow stromal stem cells: nature, biology, and potential applications." *Stem Cells* 19, 180-192.

Birgbauer E., Dinsmore J.H., Winckler B., Lander A.D., and Solomon F. (1991). "Association of ezrin isoforms with the neuronal cytoskeleton." *J Neurosci Res* 30, 232-241.

Bischoff R. (1986). "Proliferation of muscle satellite cells on intact myofibers in culture." *Dev Biol* 115, 129-139.

Bjornson C.R., Rietze R.L., Reynolds B.A., Magli M.C., and Vescovi A.L. (1999). "Turning brain into blood: a hematopoietic fate adopted by adult neural stem cells in vivo." *Science* 283, 534-537.

Blau H.M., Brazelton T.R., and Weimann J.M. (2001). "The evolving concept of a stem cell: entity or function?" *Cell* 105, 829-841.

Bonthius D.J., Karacay B., Dai D., and Pantazis N.J. (2003). "FGF-2, NGF and IGF-1, but not BDNF, utilize a nitric oxide pathway to signal neurotrophic and neuroprotective effects against alcohol toxicity in cerebellar granule cell cultures." *Brain Res Dev Brain Res* 140, 15-28.

Bowles J., Schepers G., and Koopman P. (2000). "Phylogeny of the SOX family of developmental transcription factors based on sequence and structural indicators." *Dev Biol* 227, 239-255.

Bradley A., Evans M., Kaufman M.H., and Robertson E. (1984). "Formation of germ-line chimaeras from embryo-derived teratocarcinoma cell lines." *Nature* 309, 255-256.

Brattsand G., Roos G., Marklund U., Ueda H., Landberg G., Nanberg E., Sideras P., and Gullberg M. (1993). "Quantitative analysis of the expression and regulation of an activation-regulated phosphoprotein (oncoprotein 18) in normal and neoplastic cells." *Leukemia* 7, 569-579.

Brault V., Moore R., Kutsch S., Ishibashi M., Rowitch D.H., McMahon A.P., Sommer L., Boussadia O., and Kemler R. (2001). "Inactivation of the beta-catenin gene by Wnt1-Cre-mediated deletion results in dramatic brain malformation and failure of craniofacial development." *Development* 128, 1253-1264.

Brazelton T.R., Rossi F.M., Keshet G.I., and Blau H.M. (2000). "From marrow to brain: expression of neuronal phenotypes in adult mice." *Science* 290, 1775-1779.

Bretscher A., Edwards K., and Fehon R.G. (2002). "ERM proteins and merlin: integrators at the cell cortex." *Nat Rev Mol Cell Biol* 3, 586-599.

Britsch S., Goerich D.E., Riethmacher D., Peirano R.I., Rossner M., Nave K.A., Birchmeier C., and Wegner M. (2001). "The transcription factor Sox10 is a key regulator of peripheral glial development." *Genes Dev* 15, 66-78.

Brockes J.P. (1997). "Amphibian limb regeneration: rebuilding a complex structure." *Science* 276, 81-87.

Brockes J.P., and Kumar A. (2002). "Plasticity and reprogramming of differentiated cells in amphibian regeneration." *Nat Rev Mol Cell Biol* 3, 566-574.

Bronner-Fraser M. (1993). "Mechanisms of neural crest cell migration." *Bioessays* 15, 221-230.

- Bronner-Fraser M. (2002).** "Molecular analysis of neural crest formation." *J Physiol Paris* 96, 3-8.
- Brown D.C., and Gatter K.C. (2002).** "Ki67 protein: the immaculate deception?" *Histopathology* 40, 2-11.
- Bruder S.P., Jaiswal N., and Haynesworth S.E. (1997).** "Growth kinetics, self-renewal, and the osteogenic potential of purified human mesenchymal stem cells during extensive subcultivation and following cryopreservation." *J Cell Biochem* 64, 278-294.
- Bruder S.P., Kurth A.A., Shea M., Hayes W.C., Jaiswal N., and Kadiyala S. (1998).** "Bone regeneration by implantation of purified, culture-expanded human mesenchymal stem cells." *J Orthop Res* 16, 155-162.
- Buckley A.F., Kuo C.T., and Leiden J.M. (2001).** "Transcription factor LKLF is sufficient to program T cell quiescence via a c-Myc--dependent pathway." *Nat Immunol* 2, 698-704.
- Bustin M. (1999).** "Regulation of DNA-dependent activities by the functional motifs of the high-mobility-group chromosomal proteins." *Mol Cell Biol* 19, 5237-5246.
- Byk T., Ozon S., and Sobel A. (1998).** "The Ulip family phosphoproteins--common and specific properties." *Eur J Biochem* 254, 14-24.
- Cadigan K.M., and Nusse R. (1997).** "Wnt signaling: a common theme in animal development." *Genes Dev* 11, 3286-3305.
- Callaerts P., Halder G., and Gehring W.J. (1997).** "PAX-6 in development and evolution." *Annu Rev Neurosci* 20, 483-532.
- Cano A., Perez-Moreno M.A., Rodrigo I., Locascio A., Blanco M.J., del Barrio M.G., Portillo F., and Nieto M.A. (2000).** "The transcription factor snail controls epithelial-mesenchymal transitions by repressing E-cadherin expression." *Nat Cell Biol* 2, 76-83.
- Cardinaux J.R., Allaman I., and Magistretti P.J. (2000).** "Pro-inflammatory cytokines induce the transcription factors C/EBPbeta and C/EBPdelta in astrocytes." *Glia* 29, 91-97.
- Carver E.A., Jiang R., Lan Y., Oram K.F., and Gridley T. (2001).** "The mouse snail gene encodes a key regulator of the epithelial-mesenchymal transition." *Mol Cell Biol* 21, 8184-8188.
- Cassimeris L. (2002).** "The oncoprotein 18/stathmin family of microtubule destabilizers." *Curr Opin Cell Biol* 14, 18-24.
- Cederberg A., Hulander M., Carlsson P., and Enerback S. (1999).** "The kidney-expressed winged helix transcription factor FREAC-4 is regulated by Ets-1. A possible role in kidney development." *J Biol Chem* 274, 165-169.
- Chamberlain J.R., Schwarze U., Wang P.R., Hirata R.K., Hankenson K.D., Pace J.M., Underwood R.A., Song K.M., Sussman M., Byers P.H., and Russell D.W. (2004).** "Gene targeting in stem cells from individuals with osteogenesis imperfecta." *Science* 303, 1198-1201.

- Chanas-Sacre G.**, Thiry M., Pirard S., Rogister B., Moonen G., Mbebi C., Verdiere-Sahuque M., and Leprince P. (2000). "A 295-kDA intermediate filament-associated protein in radial glia and developing muscle cells in vivo and in vitro." *Dev Dyn* 219, 514-525.
- Charge S.B.**, and **Rudnicki M.A.** (2004). "Cellular and molecular regulation of muscle regeneration." *Physiol Rev* 84, 209-238.
- Chen J.**, and **Berry M.J.** (2003). "Selenium and selenoproteins in the brain and brain diseases." *J Neurochem* 86, 1-12.
- Chen Z.F.**, and **Behringer R.R.** (1995). "twist is required in head mesenchyme for cranial neural tube morphogenesis." *Genes Dev* 9, 686-699.
- Cheung M.**, and **Briscoe J.** (2003). "Neural crest development is regulated by the transcription factor Sox9." *Development* 130, 5681-5693.
- Chou M.M.**, Masuda-Robens J.M., and Gupta M.L. (2003). "Cdc42 promotes G1 progression through p70 S6 kinase-mediated induction of cyclin E expression." *J Biol Chem* 278, 35241-35247.
- Coleman T.R.**, and **Lazarides E.** (1992). "Continuous growth of vimentin filaments in mouse fibroblasts." *J Cell Sci* 103 (Pt 3), 689-698.
- Colter D.C.**, Class R., DiGirolamo C.M., and Prockop D.J. (2000). "Rapid expansion of recycling stem cells in cultures of plastic-adherent cells from human bone marrow." *Proc Natl Acad Sci U S A* 97, 3213-3218.
- Colter D.C.**, Sekiya I., and Prockop D.J. (2001). "Identification of a subpopulation of rapidly self-renewing and multipotential adult stem cells in colonies of human marrow stromal cells." *Proc Natl Acad Sci U S A* 98, 7841-7845.
- Critchley D.R.** (2000). "Focal adhesions - the cytoskeletal connection." *Curr Opin Cell Biol* 12, 133-139.
- Czyz J.**, and **Wobus A.** (2001). "Embryonic stem cell differentiation: the role of extracellular factors." *Differentiation* 68, 167-174.
- Dahle M.K.**, Gronning L.M., Cederberg A., Blomhoff H.K., Miura N., Enerback S., Tasken K.A., and Tasken K. (2002). "Mechanisms of FOXC2- and FOXD1-mediated regulation of the RI alpha subunit of cAMP-dependent protein kinase include release of transcriptional repression and activation by protein kinase B alpha and cAMP." *J Biol Chem* 277, 22902-22908.
- Dahlstrand J.**, Zimmerman L.B., McKay R.D., and Lendahl U. (1992). "Characterization of the human nestin gene reveals a close evolutionary relationship to neurofilaments." *J Cell Sci* 103 (Pt 2), 589-597.
- Dale L.**, and **Jones C.M.** (1999). "BMP signalling in early *Xenopus* development." *Bioessays* 21, 751-760.
- Dani C.**, Smith A.G., Dessolin S., Leroy P., Staccini L., Villageois P., Darimont C., and Ailhaud G. (1997). "Differentiation of embryonic stem cells into adipocytes in vitro." *J Cell Sci* 110 (Pt 11), 1279-1285.

Davy A., Aubin J., and Soriano P. (2004). "Ephrin-B1 forward and reverse signaling are required during mouse development." *Genes Dev* 18, 572-583.

Dechat T., Vlcek S., and Foisner R. (2000). "Review: lamina-associated polypeptide 2 isoforms and related proteins in cell cycle-dependent nuclear structure dynamics." *J Struct Biol* 129, 335-345.

Degryse B., and de Virgilio M. (2003). "The nuclear protein HMGB1, a new kind of chemokine?" *FEBS Lett* 553, 11-17.

del Barrio M.G., and Nieto M.A. (2002). "Overexpression of Snail family members highlights their ability to promote chick neural crest formation." *Development* 129, 1583-1593.

DeLisser H.M., Christofidou-Solomidou M., Sun J., Nakada M.T., and Sullivan K.E. (1999). "Loss of endothelial surface expression of E-selectin in a patient with recurrent infections." *Blood* 94, 884-894.

Deng W., Obrocka M., Fischer I., and Prockop D.J. (2001). "In vitro differentiation of human marrow stromal cells into early progenitors of neural cells by conditions that increase intracellular cyclic AMP." *Biochem Biophys Res Commun* 282, 148-152.

Derouiche A., and Frotscher M. (2001). "Peripheral astrocyte processes: monitoring by selective immunostaining for the actin-binding ERM proteins." *Glia* 36, 330-341.

Diaz-Flores L., Gutierrez R., Lopez-Alonso A., Gonzalez R., and Varela H. (1992). "Pericytes as a supplementary source of osteoblasts in periosteal osteogenesis." *Clin Orthop*, 280-286.

Diaz-Flores L., Gutierrez R., Varela H., Rancel N., and Valladares F. (1991). "Microvascular pericytes: a review of their morphological and functional characteristics." *Histol Histopathol* 6, 269-286.

Digirolamo C.M., Stokes D., Colter D., Phinney D.G., Class R., and Prockop D.J. (1999). "Propagation and senescence of human marrow stromal cells in culture: a simple colony-forming assay identifies samples with the greatest potential to propagate and differentiate." *Br J Haematol* 107, 275-281.

Doetsch F., Caille I., Lim D.A., Garcia-Verdugo J.M., and Alvarez-Buylla A. (1999). "Subventricular zone astrocytes are neural stem cells in the adult mammalian brain." *Cell* 97, 703-716.

Don J., and Stelzer G. (2002). "The expanding family of CREB/CREM transcription factors that are involved with spermatogenesis." *Mol Cell Endocrinol* 187, 115-124.

Dorsky R.I., Moon R.T., and Raible D.W. (2000). "Environmental signals and cell fate specification in premigratory neural crest." *Bioessays* 22, 708-716.

Duong T.D., and Erickson C.A. (2004). "MMP-2 plays an essential role in producing epithelial-mesenchymal transformations in the avian embryo." *Dev Dyn* 229, 42-53.

Dupin E., Real C., Glavieux-Pardanaud C., Vaigot P., and Le Douarin N.M. (2003). "Reversal of developmental restrictions in neural crest lineages: transition from Schwann cells to glial-melanocytic precursors in vitro." *Proc Natl Acad Sci U S A* 100, 5229-5233.

Dutton K.A., Pauliny A., Lopes S.S., Elworthy S., Carney T.J., Rauch J., Geisler R., Haffter P., and Kelsh R.N. (2001). "Zebrafish colourless encodes *sox10* and specifies non-ectomesenchymal neural crest fates." *Development* 128, 4113-4125.

Eglitis M.A., and Mezey E. (1997). "Hematopoietic cells differentiate into both microglia and macroglia in the brains of adult mice." *Proc Natl Acad Sci U S A* 94, 4080-4085.

Ehler E., Karlhuber G., Bauer H.C., and Draeger A. (1995). "Heterogeneity of smooth muscle-associated proteins in mammalian brain microvasculature." *Cell Tissue Res* 279, 393-403.

Elowe S., Holland S.J., Kulkarni S., and Pawson T. (2001). "Downregulation of the Ras-mitogen-activated protein kinase pathway by the EphB2 receptor tyrosine kinase is required for ephrin-induced neurite retraction." *Mol Cell Biol* 21, 7429-7441.

Erickson A.C., and Couchman J.R. (2000). "Still more complexity in mammalian basement membranes." *J Histochem Cytochem* 48, 1291-1306.

Erickson J.W., and Cerione R.A. (2001). "Multiple roles for Cdc42 in cell regulation." *Curr Opin Cell Biol* 13, 153-157.

Eriksson P.S., Perfilieva E., Bjork-Eriksson T., Alborn A.M., Nordborg C., Peterson D.A., and Gage F.H. (1998). "Neurogenesis in the adult human hippocampus." *Nat Med* 4, 1313-1317.

Ernstsson S., Pierrou S., Hulander M., Cederberg A., Hellqvist M., Carlsson P., and Enerback S. (1996). "Characterization of the human forkhead gene FREAC-4. Evidence for regulation by Wilms' tumor suppressor gene (*WT-1*) and *p53*." *J Biol Chem* 271, 21094-21099.

Evans M.J., and Kaufman M.H. (1981). "Establishment in culture of pluripotential cells from mouse embryos." *Nature* 292, 154-156.

Everett A.W., and Nichol K.A. (1990). "Ezrin immunoreactivity in neuron subpopulations: cellular distribution in relation to cytoskeletal proteins in sensory neurons." *J Histochem Cytochem* 38, 1137-1144.

Fages C., Nolo R., Huttunen H.J., Eskelinen E., and Rauvala H. (2000). "Regulation of cell migration by amphoterin." *J Cell Sci* 113 (Pt 4), 611-620.

Feuerbach F., Galy V., Trelles-Sticken E., Fromont-Racine M., Jacquier A., Gilson E., Olivo-Marin J.C., Scherthan H., and Nehrbass U. (2002). "Nuclear architecture and spatial positioning help establish transcriptional states of telomeres in yeast." *Nat Cell Biol* 4, 214-221.

Filomeni G., Rotilio G., and Ciriolo M.R. (2002). "Cell signalling and the glutathione redox system." *Biochem Pharmacol* 64, 1057-1064.

Finn A.J., Feng G., and Pendergast A.M. (2003). "Postsynaptic requirement for Abl kinases in assembly of the neuromuscular junction." *Nat Neurosci* 6, 717-723.

Fraichard A., Chassande O., Bilbaut G., Dehay C., Savatier P., and Samarut J. (1995). "In vitro differentiation of embryonic stem cells into glial cells and functional neurons." *J Cell Sci* 108 (Pt 10), 3181-3188.

Francstel C., Schubeler D., Martin D.I., and Groudine M. (2000). "Nuclear compartmentalization and gene activity." *Nat Rev Mol Cell Biol* 1, 137-143.

Fremion F., Darboux I., Diano M., Hipeau-Jacquotte R., Seeger M.A., and Piovant M. (2000). "Amalgam is a ligand for the transmembrane receptor neurotactin and is required for neurotactin-mediated cell adhesion and axon fasciculation in *Drosophila*." *Embo J* 19, 4463-4472.

Friedenstein A.J., Chailakhjan R.K., and Lalykina K.S. (1970). "The development of fibroblast colonies in monolayer cultures of guinea-pig bone marrow and spleen cells." *Cell Tissue Kinet* 3, 393-403.

Friedenstein A.J., Deriglasova U.F., Kulagina N.N., Panasuk A.F., Rudakowa S.F., Luria E.A., and Ruadkow I.A. (1974). "Precursors for fibroblasts in different populations of hematopoietic cells as detected by the in vitro colony assay method." *Exp Hematol* 2, 83-92.

Friedenstein A.J., Gorskaja J.F., and Kulagina N.N. (1976). "Fibroblast precursors in normal and irradiated mouse hematopoietic organs." *Exp Hematol* 4, 267-274.

Friedenstein A.J., Petrakova K.V., Kurolesova A.I., and Frolova G.P. (1968). "Heterotopic of bone marrow. Analysis of precursor cells for osteogenic and hematopoietic tissues." *Transplantation* 6, 230-247.

Furuta Y., Uehara T., and Nomura Y. (2003). "Correlation between delayed neuronal cell death and selective decrease in phosphatidylinositol 4-kinase expression in the CA1 subfield of the hippocampus after transient forebrain ischemia." *J Cereb Blood Flow Metab* 23, 962-971.

Gage F.H. (2000). "Mammalian neural stem cells." *Science* 287, 1433-1438.

Galmiche M.C., Koteliansky V.E., Briere J., Herve P., and Charbord P. (1993). "Stromal cells from human long-term marrow cultures are mesenchymal cells that differentiate following a vascular smooth muscle differentiation pathway." *Blood* 82, 66-76.

Gerhardt H., and Betsholtz C. (2003). "Endothelial-pericyte interactions in angiogenesis." *Cell Tissue Res* 314, 15-23.

Gerhardt H., Wolburg H., and Redies C. (2000). "N-cadherin mediates pericytic-endothelial interaction during brain angiogenesis in the chicken." *Dev Dyn* 218, 472-479.

Geschwind DH., Ou J, Easterday MC, Dougherty JD, Jackson RL, Chen Z, Antoine H, Terskikh A, Weissman IL, Nelson SF, Kornblum HI. (2001) "A genetic analysis of neural progenitor differentiation." *Neuron* 29(2), 325-339.

Giancotti V., Pani B., D'Andrea P., Berlingieri M.T., Di Fiore P.P., Fusco A., Vecchio G., Philp R., Crane-Robinson C., Nicolas R.H., and et al. (1987). "Elevated levels of a specific class of nuclear phosphoproteins in cells transformed with v-ras and v-mos oncogenes and by cotransfection with c-myc and polyoma middle T genes." *Embo J* 6, 1981-1987.

Gitelman I. (1997). "Twist protein in mouse embryogenesis." *Dev Biol* 189, 205-214.

Goldman S.A., and Luskin M.B. (1998). "Strategies utilized by migrating neurons of the postnatal vertebrate forebrain." *Trends Neurosci* 21, 107-114.

- Goldman S.A., and Nottebohm F. (1983).** "Neuronal production, migration, and differentiation in a vocal control nucleus of the adult female canary brain." *Proc Natl Acad Sci U S A* 80, 2390-2394.
- Goodwin G.H., Cockerill P.N., Kellam S., and Wright C.A. (1985).** "Fractionation by high-performance liquid chromatography of the low-molecular-mass high-mobility-group (HMG) chromosomal proteins present in proliferating rat cells and an investigation of the HMG proteins present in virus transformed cells." *Eur J Biochem* 149, 47-51.
- Goshima J., Goldberg V.M., and Caplan A.I. (1991).** "Osteogenic potential of culture-expanded rat marrow cells as assayed in vivo with porous calcium phosphate ceramic." *Biomaterials* 12, 253-258.
- Goslin K., Birgbauer E., Banker G., and Solomon F. (1989).** "The role of cytoskeleton in organizing growth cones: a microfilament-associated growth cone component depends upon microtubules for its localization." *J Cell Biol* 109, 1621-1631.
- Gotz M., Hartfuss E., and Malatesta P. (2002).** "Radial glial cells as neuronal precursors: a new perspective on the correlation of morphology and lineage restriction in the developing cerebral cortex of mice." *Brain Res Bull* 57, 777-788.
- Guazzi S., Strangio A., Franzi A.T., and Bianchi M.E. (2003).** "HMGB1, an architectural chromatin protein and extracellular signalling factor, has a spatially and temporally restricted expression pattern in mouse brain." *Gene Expr Patterns* 3, 29-33.
- Guillemot F. (1999).** "Vertebrate bHLH genes and the determination of neuronal fates." *Exp Cell Res* 253, 357-364.
- Hall B.K. (1999)** "The Neural Crest in Development and Evolution." Springer-Verlag.
- Hall B.K. (2000).** "The neural crest as a fourth germ layer and vertebrates as quadroblastic not triploblastic." *Evol Dev* 2, 3-5.
- Hansen T.O., Rehfeld J.F., and Nielsen F.C. (2003).** "KCl potentiates forskolin-induced PC12 cell neurite outgrowth via protein kinase A and extracellular signal-regulated kinase signaling pathways." *Neurosci Lett* 347, 57-61.
- Hanson I.M., Seawright A., Hardman K., Hodgson S., Zaletayev D., Fekete G., and van Heyningen V. (1993).** "PAX6 mutations in aniridia." *Hum Mol Genet* 2, 915-920.
- Hartfuss E., Galli R., Heins N., and Gotz M. (2001).** "Characterization of CNS precursor subtypes and radial glia." *Dev Biol* 229, 15-30.
- Haselton F.R., and Heimark R.L. (1997).** "Role of cadherins 5 and 13 in the aortic endothelial barrier." *J Cell Physiol* 171, 243-251.
- Hasenpusch-Theil K., Chadwick B.P., Theil T., Heath S.K., Wilkinson D.G., and Frischauf A.M. (1999).** "PHF2, a novel PHD finger gene located on human chromosome 9q22." *Mamm Genome* 10, 294-298.

Hatanaka Y., Uratani Y., Takiguchi-Hayashi K., Omori A., Sato K., Miyamoto M., and Arimatsu Y. (1994). "Intracortical regionality represented by specific transcription for a novel protein, latexin." *Eur J Neurosci* 6, 973-982.

Hellstrom M., Kalen M., Lindahl P., Abramsson A., and Betsholtz C. (1999). "Role of PDGF-B and PDGFR-beta in recruitment of vascular smooth muscle cells and pericytes during embryonic blood vessel formation in the mouse." *Development* 126, 3047-3055.

Hernandez M.C., Andres-Barquin P.J., Holt I., and Israel M.A. (1998). "Cloning of human ENC-1 and evaluation of its expression and regulation in nervous system tumors." *Exp Cell Res* 242, 470-477.

Herrmann H., and **Aebi U.** (2000). "Intermediate filaments and their associates: multi-talented structural elements specifying cytoarchitecture and cytodynamics." *Curr Opin Cell Biol* 12, 79-90.

Hirschi K.K., and **D'Amore P.A.** (1996). "Pericytes in the microvasculature." *Cardiovasc Res* 32, 687-698.

Hofstetter C.P., Schwarz E.J., Hess D., Widenfalk J., El Manira A., Prockop D.J., and Olson L. (2002). "Marrow stromal cells form guiding strands in the injured spinal cord and promote recovery." *Proc Natl Acad Sci U S A* 99, 2199-2204.

Holmer L., and **Worman H.J.** (2001). "Inner nuclear membrane proteins: functions and targeting." *Cell Mol Life Sci* 58, 1741-1747.

Honma Y., Kanazawa K., Mori T., Tanno Y., Tojo M., Kiyosawa H., Takeda J., Nikaido T., Tsukamoto T., Yokoya S., and Wanaka A. (1999). "Identification of a novel gene, OASIS, which encodes for a putative CREB/ATF family transcription factor in the long-term cultured astrocytes and gliotic tissue." *Brain Res Mol Brain Res* 69, 93-103.

Hoogenraad C.C., Akhmanova A., Galjart N., and De Zeeuw C.I. (2004). "LIMK1 and CLIP-115: linking cytoskeletal defects to Williams syndrome." *Bioessays* 26, 141-150.

Hori O., Brett J., Slattery T., Cao R., Zhang J., Chen J.X., Nagashima M., Lundh E.R., Vijay S., Nitecki D., and et al. (1995). "The receptor for advanced glycation end products (RAGE) is a cellular binding site for amphoterin. Mediation of neurite outgrowth and co-expression of rage and amphoterin in the developing nervous system." *J Biol Chem* 270, 25752-25761.

Horwitz E.M., Prockop D.J., Fitzpatrick L.A., Koo W.W., Gordon P.L., Neel M., Sussman M., Orchard P., Marx J.C., Pyeritz R.E., and Brenner M.K. (1999). "Transplantability and therapeutic effects of bone marrow-derived mesenchymal cells in children with osteogenesis imperfecta." *Nat Med* 5, 309-313.

Hsieh J.J., Zhou S., Chen L., Young D.B., and Hayward S.D. (1999). "CIR, a corepressor linking the DNA binding factor CBF1 to the histone deacetylase complex." *Proc Natl Acad Sci U S A* 96, 23-28.

Ishikawa H., Heaney A.P., Yu R., Horwitz G.A., and Melmed S. (2001). "Human pituitary tumor-transforming gene induces angiogenesis." *J Clin Endocrinol Metab* 86, 867-874.

Ito M., Yoshioka K., Akechi M., Yamashita S., Takamatsu N., Sugiyama K., Hibi M., Nakabeppu Y., Shiba T., and Yamamoto K.I. (1999). "JSAP1, a novel jun N-terminal protein kinase (JNK)-binding protein that functions as a Scaffold factor in the JNK signaling pathway." *Mol Cell Biol* 19, 7539-7548.

Jalink K., van Corven E.J., Hengeveld T., Morii N., Narumiya S., and Moolenaar W.H. (1994). "Inhibition of lysophosphatidate- and thrombin-induced neurite retraction and neuronal cell rounding by ADP ribosylation of the small GTP-binding protein Rho." *J Cell Biol* 126, 801-810.

Jejurikar S.S., and Kuzon W.M., Jr. (2003). "Satellite cell depletion in degenerative skeletal muscle." *Apoptosis* 8, 573-578.

Jeong J., Mao J., Tenzen T., Kottmann A.H., and McMahon A.P. (2004). "Hedgehog signaling in the neural crest cells regulates the patterning and growth of facial primordia." *Genes Dev* 18, 937-951.

Jia L., Young M.F., Powell J., Yang L., Ho N.C., Hotchkiss R., Robey P.G., and Francomano C.A. (2002). "Gene expression profile of human bone marrow stromal cells: high-throughput expressed sequence tag sequencing analysis." *Genomics* 79, 7-17.

Jiang R., Lan Y., Norton C.R., Sundberg J.P., and Gridley T. (1998). "The Slug gene is not essential for mesoderm or neural crest development in mice." *Dev Biol* 198, 277-285.

Jiang Y., Jahagirdar B.N., Reinhardt R.L., Schwartz R.E., Keene C.D., Ortiz-Gonzalez X.R., Reyes M., Lenvik T., Lund T., Blackstad M., *et al.* (2002a). "Pluripotency of mesenchymal stem cells derived from adult marrow." *Nature* 418, 41-49.

Jiang Y., Vaessen B., Lenvik T., Blackstad M., Reyes M., and Verfaillie C.M. (2002b). "Multipotent progenitor cells can be isolated from postnatal murine bone marrow, muscle, and brain." *Exp Hematol* 30, 896-904.

Jin H.K., Carter J.E., Huntley G.W., and Schuchman E.H. (2002). "Intracerebral transplantation of mesenchymal stem cells into acid sphingomyelinase-deficient mice delays the onset of neurological abnormalities and extends their life span." *J Clin Invest* 109, 1183-1191.

Jogi A., Persson P., Grynfeld A., Pahlman S., and Axelson H. (2002). "Modulation of basic helix-loop-helix transcription complex formation by Id proteins during neuronal differentiation." *J Biol Chem* 277, 9118-9126.

Jori F.P., Galderisi U., Piegari E., Peluso G., Cipollaro M., Cascino A., Giordano A., and Melone M.A. (2001). "RB2/p130 ectopic gene expression in neuroblastoma stem cells: evidence of cell-fate restriction and induction of differentiation." *Biochem J* 360, 569-577.

Kadiyala S., Young R.G., Thiede M.A., and Bruder S.P. (1997). "Culture expanded canine mesenchymal stem cells possess osteochondrogenic potential in vivo and in vitro." *Cell Transplant* 6, 125-134.

Kalousek F., Darigo M.D., and Rosenberg L.E. (1980). "Isolation and characterization of propionyl-CoA carboxylase from normal human liver. Evidence for a protomeric tetramer of nonidentical subunits." *J Biol Chem* 255, 60-65.

- Kamakaka R.T.**, Bulger M., Kaufman P.D., Stillman B., and Kadonaga J.T. (1996). "Postreplicative chromatin assembly by Drosophila and human chromatin assembly factor 1." *Mol Cell Biol* 16, 810-817.
- Karsten SL**, Kudo LC, Jackson R, Sabatti C, Kornblum HI, Geschwind DH. (2003) "Global analysis of gene expression in neural progenitors reveals specific cell-cycle, signaling, and metabolic networks." *Dev Biol* 261(1), 165-182.
- Keene C.D.**, Ortiz-Gonzalez X.R., Jiang Y., Largaespada D.A., Verfaillie C.M., and Low W.C. (2003). "Neural differentiation and incorporation of bone marrow-derived multipotent adult progenitor cells after single cell transplantation into blastocyst stage mouse embryos." *Cell Transplant* 12, 201-213.
- Kelkar N.**, Delmotte M.H., Weston C.R., Barrett T., Sheppard B.J., Flavell R.A., and Davis R.J. (2003). "Morphogenesis of the telencephalic commissure requires scaffold protein JNK-interacting protein 3 (JIP3)." *Proc Natl Acad Sci U S A* 100, 9843-9848.
- Kim T.A.**, Lim J., Ota S., Raja S., Rogers R., Rivnay B., Avraham H., and Avraham S. (1998). "NRP/B, a novel nuclear matrix protein, associates with p110(RB) and is involved in neuronal differentiation." *J Cell Biol* 141, 553-566.
- Kimura M.**, Kotani S., Hattori T., Sumi N., Yoshioka T., Todokoro K., and Okano Y. (1997). "Cell cycle-dependent expression and spindle pole localization of a novel human protein kinase, Aik, related to Aurora of Drosophila and yeast Ipl1." *J Biol Chem* 272, 13766-13771.
- Knecht A.K., and Bronner-Fraser M.** (2002). "Induction of the neural crest: a multigene process." *Nat Rev Genet* 3, 453-461.
- Kobayashi M.**, Sakai E., Furuta Y., and Takamatsu K. (1998). "Isolation of two human cDNAs, HLP3 and HLP4, homologous to the neuron-specific calcium-binding protein genes." *DNA Seq* 9, 171-176.
- Kobayashi M.**, Taniura H., and Yoshikawa K. (2002). "Ectopic expression of necdin induces differentiation of mouse neuroblastoma cells." *J Biol Chem* 277, 42128-42135.
- Koblar S.A.**, Murphy M., Barrett G.L., Underhill A., Gros P., and Bartlett P.F. (1999). "Pax-3 regulates neurogenesis in neural crest-derived precursor cells." *J Neurosci Res* 56, 518-530.
- Koken M.H.**, Hoogerbrugge J.W., Jasper-Dekker I., de Wit J., Willemsen R., Roest H.P., Grootegoed J.A., and Hoeijmakers J.H. (1996). "Expression of the ubiquitin-conjugating DNA repair enzymes HHR6A and B suggests a role in spermatogenesis and chromatin modification." *Dev Biol* 173, 119-132.
- Kon E.**, Muraglia A., Corsi A., Bianco P., Marcacci M., Martin I., Boyde A., Ruspantini I., Chistolini P., Rocca M., *et al.* (2000). "Autologous bone marrow stromal cells loaded onto porous hydroxyapatite ceramic accelerate bone repair in critical-size defects of sheep long bones." *J Biomed Mater Res* 49, 328-337.
- Kong A.N.**, Yu R., Hebbar V., Chen C., Owuor E., Hu R., Ee R., and Mandlekar S. (2001). "Signal transduction events elicited by cancer prevention compounds." *Mutat Res* 480-481, 231-241.

Kopen G.C., Prockop D.J., and Phinney D.G. (1999). "Marrow stromal cells migrate throughout forebrain and cerebellum, and they differentiate into astrocytes after injection into neonatal mouse brains." *Proc Natl Acad Sci U S A* 96, 10711-10716.

Kotton D.N., Ma B.Y., Cardoso W.V., Sanderson E.A., Summer R.S., Williams M.C., and Fine A. (2001). "Bone marrow-derived cells as progenitors of lung alveolar epithelium." *Development* 128, 5181-5188.

Kramer J., Hegert C., Guan K., Wobus A.M., Muller P.K., and Rohwedel J. (2000). "Embryonic stem cell-derived chondrogenic differentiation in vitro: activation by BMP-2 and BMP-4." *Mech Dev* 92, 193-205.

Krebsbach P.H., Kuznetsov S.A., Satomura K., Emmons R.V., Rowe D.W., and Robey P.G. (1997). "Bone formation in vivo: comparison of osteogenesis by transplanted mouse and human marrow stromal fibroblasts." *Transplantation* 63, 1059-1069.

Kuboki Y., Ito M., Takamatsu N., Yamamoto K.I., Shiba T., and Yoshioka K. (2000). "A scaffold protein in the c-Jun NH2-terminal kinase signaling pathways suppresses the extracellular signal-regulated kinase signaling pathways." *J Biol Chem* 275, 39815-39818.

Kudo M., Wang Y., Wani M.A., Xu M., Ayub A., and Ashraf M. (2003). "Implantation of bone marrow stem cells reduces the infarction and fibrosis in ischemic mouse heart." *J Mol Cell Cardiol* 35, 1113-1119.

Kuznetsov S.A., Friedenstein A.J., and Robey P.G. (1997). "Factors required for bone marrow stromal fibroblast colony formation in vitro." *Br J Haematol* 97, 561-570.

Kuznetsov S.A., Mankani M.H., and Robey P.G. (2000). "Effect of serum on human bone marrow stromal cells: ex vivo expansion and in vivo bone formation." *Transplantation* 70, 1780-1787.

Lagasse E., Connors H., Al-Dhalimy M., Reitsma M., Dohse M., Osborne L., Wang X., Finegold M., Weissman I.L., and Grompe M. (2000). "Purified hematopoietic stem cells can differentiate into hepatocytes in vivo." *Nat Med* 6, 1229-1234.

Lasorella A., Uo T., and Iavarone A. (2001). "Id proteins at the cross-road of development and cancer." *Oncogene* 20, 8326-8333.

Lazarini F., Tham T.N., Casanova P., Arenzana-Seisdedos F., and Dubois-Dalcq M. (2003). "Role of the alpha-chemokine stromal cell-derived factor (SDF-1) in the developing and mature central nervous system." *Glia* 42, 139-148.

Le Douarin N.M., and Dupin E. (2003). "Multipotentiality of the neural crest." *Curr Opin Genet Dev* 13, 529-536.

Lee H.Y., Kleber M., Hari L., Brault V., Suter U., Taketo M.M., Kemler R., and Sommer L. (2004). "Instructive role of Wnt/beta-catenin in sensory fate specification in neural crest stem cells." *Science* 303, 1020-1023.

Lee M.K., and Cleveland D.W. (1996). "Neuronal intermediate filaments." *Annu Rev Neurosci* 19, 187-217.

- Lee SH**, Lumelsky N, Studer L, Auerbach JM, McKay RD. (2000) "Efficient generation of midbrain and hindbrain neurons from mouse embryonic stem cells." *Nat Biotechnol.* 18(6), 675-679.
- Lendahl U.**, Zimmerman L.B., and McKay R.D. (1990). "CNS stem cells express a new class of intermediate filament protein." *Cell* 60, 585-595.
- Leptin M.** (1991). "twist and snail as positive and negative regulators during Drosophila mesoderm development." *Genes Dev* 5, 1568-1576.
- Lewis S.A., and Cowan N.** (1990). "Microtubule bundling." *Nature* 345, 674.
- Li B.**, Xu W., Luo C., Gozal D., and Liu R. (2003). "VEGF-induced activation of the PI3-K/Akt pathway reduces mutant SOD1-mediated motor neuron cell death." *Brain Res Mol Brain Res* 111, 155-164.
- Li J.**, Sensebe L., Herve P., and Charbord P. (1995). "Nontransformed colony-derived stromal cell lines from normal human marrows. II. Phenotypic characterization and differentiation pathway." *Exp Hematol* 23, 133-141.
- Li Y.**, Chen J., Wang L., Zhang L., Lu M., and Chopp M. (2001). "Intracerebral transplantation of bone marrow stromal cells in a 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine mouse model of Parkinson's disease." *Neurosci Lett* 316, 67-70.
- Liebl E.C.**, Rowe R.G., Forsthoefel D.J., Stammler A.L., Schmidt E.R., Turski M., and Seeger M.A. (2003). "Interactions between the secreted protein Amalgam, its transmembrane receptor Neurotactin and the Abelson tyrosine kinase affect axon pathfinding." *Development* 130, 3217-3226.
- Lipinski M.M.**, and Jacks T. (1999). "The retinoblastoma gene family in differentiation and development." *Oncogene* 18, 7873-7882.
- Liu K.J.**, and Harland R.M. (2003). "Cloning and characterization of Xenopus Id4 reveals differing roles for Id genes." *Dev Biol* 264, 339-351.
- Liu Q.**, Yu L., Gao J., Fu Q., Zhang J., Zhang P., Chen J., and Zhao S. (2000). "Cloning, tissue expression pattern and genomic organization of latexin, a human homologue of rat carboxypeptidase A inhibitor." *Mol Biol Rep* 27, 241-246.
- Luo L.** (2000). "Rho GTPases in neuronal morphogenesis." *Nat Rev Neurosci* 1, 173-180.
- Luo L.**, Jan L., and Jan Y.N. (1996). "Small GTPases in axon outgrowth." *Perspect Dev Neurobiol* 4, 199-204.
- Luo L.**, Liao Y.J., Jan L.Y., and Jan Y.N. (1994). "Distinct morphogenetic functions of similar small GTPases: Drosophila Drac1 is involved in axonal outgrowth and myoblast fusion." *Genes Dev* 8, 1787-1802.
- Lyakhovich A., and Shekhar M.P.** (2004). "RAD6B overexpression confers chemoresistance: RAD6 expression during cell cycle and its redistribution to chromatin during DNA damage-induced response." *Oncogene* 23, 3097-3106.

Makino S., Fukuda K., Miyoshi S., Konishi F., Kodama H., Pan J., Sano M., Takahashi T., Hori S., Abe H., *et al.* (1999). "Cardiomyocytes can be generated from marrow stromal cells in vitro." *J Clin Invest* 103, 697-705.

Marquardt A., Stohr H., White K., and Weber B.H. (2000). "cDNA cloning, genomic structure, and chromosomal localization of three members of the human fatty acid desaturase family." *Genomics* 66, 175-183.

Martin G.R. (1981). "Isolation of a pluripotent cell line from early mouse embryos cultured in medium conditioned by teratocarcinoma stem cells." *Proc Natl Acad Sci U S A* 78, 7634-7638.

Matsuo T., Osumi-Yamashita N., Noji S., Ohuchi H., Koyama E., Myokai F., Matsuo N., Taniguchi S., Doi H., Iseki S., and *et al.* (1993). "A mutation in the Pax-6 gene in rat small eye is associated with impaired migration of midbrain crest cells." *Nat Genet* 3, 299-304.

Matsuura H., Nishitoh H., Takeda K., Matsuzawa A., Amagasa T., Ito M., Yoshioka K., and Ichijo H. (2002). "Phosphorylation-dependent scaffolding role of JSAP1/JIP3 in the ASK1-JNK signaling pathway. A new mode of regulation of the MAP kinase cascade." *J Biol Chem* 277, 40703-40709.

Mauro A. (1961). "Satellite cell of skeletal muscle fibers." *J Biophys Biochem Cytol* 9, 493-495.

Mayor R., Guerrero N., Young R.M., Gomez-Skarmeta J.L., and Cuellar C. (2000). "A novel function for the Xslug gene: control of dorsal mesendoderm development by repressing BMP-4." *Mech Dev* 97, 47-56.

Meneghini M.D., Wu M., and Madhani H.D. (2003). "Conserved histone variant H2A.Z protects euchromatin from the ectopic spread of silent heterochromatin." *Cell* 112, 725-736.

Meng Y., Zhang Y., Tregoubov V., Janus C., Cruz L., Jackson M., Lu W.Y., MacDonald J.F., Wang J.Y., Falls D.L., and Jia Z. (2002). "Abnormal spine morphology and enhanced LTP in LIMK-1 knockout mice." *Neuron* 35, 121-133.

Mets T., and Verdonk G. (1981). "In vitro aging of human bone marrow derived stromal cells." *Mech Ageing Dev* 16, 81-89.

Meyer G., and Feldman E.L. (2002). "Signaling mechanisms that regulate actin-based motility processes in the nervous system." *J Neurochem* 83, 490-503.

Misson J.P., Edwards M.A., Yamamoto M., and Caviness V.S., Jr. (1988). "Identification of radial glial cells within the developing murine central nervous system: studies based upon a new immunohistochemical marker." *Brain Res Dev Brain Res* 44, 95-108.

Moreno T.A., and Bronner-Fraser M. (2001). "The secreted glycoprotein Noelin-1 promotes neurogenesis in *Xenopus*." *Dev Biol* 240, 340-360.

Moreno T.A., and Bronner-Fraser M. (2002). "Neural expression of mouse Noelin-1/2 and comparison with other vertebrates." *Mech Dev* 119, 121-125.

Morrison S.J. (2001). "Neuronal differentiation: proneural genes inhibit gliogenesis." *Curr Biol* 11, R349-351.

Morrison S.J., and Weissman I.L. (1994). "The long-term repopulating subset of hematopoietic stem cells is deterministic and isolatable by phenotype." *Immunity* 1, 661-673.

Movsesyan V., Whalin M., Shibutani M., Katagiri Y., Broude E., and Guroff G. (1996). "Down-regulation of cyclin F levels during nerve growth factor-induced differentiation of PC12 cells." *Exp Cell Res* 227, 203-207.

Muller H., and Helin K. (2000). "The E2F transcription factors: key regulators of cell proliferation." *Biochim Biophys Acta* 1470, M1-12.

Muller S., Ronfani L., and Bianchi M.E. (2004). "Regulated expression and subcellular localization of HMGB1, a chromatin protein with a cytokine function." *J Intern Med* 255, 332-343.

Nehls V., and Drenckhahn D. (1991). "Heterogeneity of microvascular pericytes for smooth muscle type alpha-actin." *J Cell Biol* 113, 147-154.

Nieto M.A. (2002). "The snail superfamily of zinc-finger transcription factors." *Nat Rev Mol Cell Biol* 3, 155-166.

Nieto M.A., Sargent M.G., Wilkinson D.G., and Cooke J. (1994). "Control of cell behavior during vertebrate development by Slug, a zinc finger gene." *Science* 264, 835-839.

Nievers M.G., Schaapveld R.Q., and Sonnenberg A. (1999). "Biology and function of hemidesmosomes." *Matrix Biol* 18, 5-17.

Nikaido T., Yokoya S., Mori T., Hagino S., Iseki K., Zhang Y., Takeuchi M., Takaki H., Kikuchi S., and Wanaka A. (2001). "Expression of the novel transcription factor OASIS, which belongs to the CREB/ATF family, in mouse embryo with special reference to bone development." *Histochem Cell Biol* 116, 141-148.

Nobes C.D., and Hall A. (1995). "Rho, rac, and cdc42 GTPases regulate the assembly of multimolecular focal complexes associated with actin stress fibers, lamellipodia, and filopodia." *Cell* 81, 53-62.

Noble M., Smith J., Power J., and Mayer-Proschel M. (2003). "Redox state as a central modulator of precursor cell function." *Ann N Y Acad Sci* 991, 251-271.

Oertle T., and Schwab M.E. (2003). "Nogo and its paRTNers." *Trends Cell Biol* 13, 187-194.

Oertle T., van der Haar M.E., Bandtlow C.E., Robeva A., Burfeind P., Buss A., Huber A.B., Simonen M., Schnell L., Brosamle C., et al. (2003). "Nogo-A inhibits neurite outgrowth and cell spreading with three discrete regions." *J Neurosci* 23, 5393-5406.

Oh Y., Nagalla S.R., Yamanaka Y., Kim H.S., Wilson E., and Rosenfeld R.G. (1996). "Synthesis and characterization of insulin-like growth factor-binding protein (IGFBP)-7. Recombinant human mac25 protein specifically binds IGF-I and -II." *J Biol Chem* 271, 30322-30325.

Ohnuma S., and Harris W.A. (2003). "Neurogenesis and the cell cycle." *Neuron* 40, 199-208.

Ohya S., and Horowitz B. (2002). "Differential transcriptional expression of Ca²⁺ BP superfamilies in murine gastrointestinal smooth muscles." *Am J Physiol Gastrointest Liver Physiol* 283, G1290-1297.

Oikawa E., Iijima H., Suzuki T., Sasano H., Sato H., Kamataki A., Nagura H., Kang M.J., Fujino T., Suzuki H., and Yamamoto T.T. (1998). "A novel acyl-CoA synthetase, ACS5, expressed in intestinal epithelial cells and proliferating preadipocytes." *J Biochem (Tokyo)* 124, 679-685.

Orlic D., Kajstura J., Chimenti S., Bodine D.M., Leri A., and Anversa P. (2001). "Transplanted adult bone marrow cells repair myocardial infarcts in mice." *Ann N Y Acad Sci* 938, 221-229; discussion 229-230.

Osaka H., Wang Y.L., Takada K., Takizawa S., Setsue R., Li H., Sato Y., Nishikawa K., Sun Y.J., Sakurai M., *et al.* (2003). "Ubiquitin carboxy-terminal hydrolase L1 binds to and stabilizes monoubiquitin in neuron." *Hum Mol Genet* 12, 1945-1958.

Osley M.A. (2004). "H2B ubiquitylation: the end is in sight." *Biochim Biophys Acta* 1677, 74-78.

Oyama M., Tatlock A., Fukuta S., Kavalkovich K., Nishimura K., Johnstone B., Robbins P.D., Evans C.H., and Niyibizi C. (1999). "Retrovirally transduced bone marrow stromal cells isolated from a mouse model of human osteogenesis imperfecta (oim) persist in bone and retain the ability to form cartilage and bone after extended passaging." *Gene Ther* 6, 321-329.

Pablos J.L., Amara A., Bouloc A., Santiago B., Caruz A., Galindo M., Delaunay T., Virelizier J.L., and Arenzana-Seisdedos F. (1999). "Stromal-cell derived factor is expressed by dendritic cells and endothelium in human skin." *Am J Pathol* 155, 1577-1586.

Paglini G., Kunda P., Quiroga S., Kosik K., and Caceres A. (1998). "Suppression of radixin and moesin alters growth cone morphology, motility, and process formation in primary cultured neurons." *J Cell Biol* 143, 443-455.

Palmer A., Zimmer M., Erdmann K.S., Eulenburg V., Porthin A., Heumann R., Deutsch U., and Klein R. (2002). "EphrinB phosphorylation and reverse signaling: regulation by Src kinases and PTP-BL phosphatase." *Mol Cell* 9, 725-737.

Parada L., and Misteli T. (2002). "Chromosome positioning in the interphase nucleus." *Trends Cell Biol* 12, 425-432.

Paulin D. (1981). "Cytoskeleton organization in differentiating mouse teratocarcinoma cells." *Biochimie* 63, 347-363.

Penkowa M., and Hidalgo J. (2003). "Treatment with metallothionein prevents demyelination and axonal damage and increases oligodendrocyte precursors and tissue repair during experimental autoimmune encephalomyelitis." *J Neurosci Res* 72, 574-586.

Pereira R.F., Halford K.W., O'Hara M.D., Leeper D.B., Sokolov B.P., Pollard M.D., Bagasra O., and Prockop D.J. (1995). "Cultured adherent cells from marrow can serve as long-lasting precursor cells for bone, cartilage, and lung in irradiated mice." *Proc Natl Acad Sci U S A* 92, 4857-4861.

Pereira R.F., O'Hara M.D., Laptev A.V., Halford K.W., Pollard M.D., Class R., Simon D., Livezey K., and Prockop D.J. (1998). "Marrow stromal cells as a source of progenitor cells for nonhematopoietic tissues in transgenic mice with a phenotype of osteogenesis imperfecta." *Proc Natl Acad Sci U S A* 95, 1142-1147.

Perez-Losada J., Sanchez-Martin M., Rodriguez-Garcia A., Sanchez M.L., Orfao A., Flores T., and Sanchez-Garcia I. (2002). "Zinc-finger transcription factor Slug contributes to the function of the stem cell factor c-kit signaling pathway." *Blood* 100, 1274-1286.

Perrone-Bizzozero N., and Bolognani F. (2002). "Role of HuD and other RNA-binding proteins in neural development and plasticity." *J Neurosci Res* 68, 121-126.

Persengiev S.P., and Kilpatrick D.L. (1997). "The DNA methyltransferase inhibitor 5-azacytidine specifically alters the expression of helix-loop-helix proteins Id1, Id2 and Id3 during neuronal differentiation." *Neuroreport* 8, 2091-2095.

Petersen B.E., Bowen W.C., Patrene K.D., Mars W.M., Sullivan A.K., Murase N., Boggs S.S., Greenberger J.S., and Goff J.P. (1999). "Bone marrow as a potential source of hepatic oval cells." *Science* 284, 1168-1170.

Petit V., and Thiery J.P. (2000). "Focal adhesions: structure and dynamics." *Biol Cell* 92, 477-494.

Phinney D.G., Kopen G., Isaacson R.L., and Prockop D.J. (1999). "Plastic adherent stromal cells from the bone marrow of commonly used strains of inbred mice: variations in yield, growth, and differentiation." *J Cell Biochem* 72, 570-585.

Pittenger M.F., Mackay A.M., Beck S.C., Jaiswal R.K., Douglas R., Mosca J.D., Moorman M.A., Simonetti D.W., Craig S., and Marshak D.R. (1999). "Multilineage potential of adult human mesenchymal stem cells." *Science* 284, 143-147.

Pollack JR, Perou CM, Alizadeh AA, Eisen MB, Pergamenschikov A, Williams CF, Jeffrey SS, Botstein D, Brown PO. (1999) Genome-wide analysis of DNA copy-number changes using cDNA microarrays. *Nat Genet* 23(1), 41-46.

Priller J., Persons D.A., Klett F.F., Kempermann G., Kreutzberg G.W., and Dirnagl U. (2001). "Neogenesis of cerebellar Purkinje neurons from gene-marked bone marrow cells in vivo." *J Cell Biol* 155, 733-738.

Prockop D.J. (1997). "Marrow stromal cells as stem cells for nonhematopoietic tissues." *Science* 276, 71-74.

Prockop D.J., Gregory C.A., and Spees J.L. (2003). "One strategy for cell and gene therapy: harnessing the power of adult stem cells to repair tissues." *Proc Natl Acad Sci U S A* 100 Suppl 1, 11917-11923.

Qian X., Shen Q., Goderie S.K., He W., Capela A., Davis A.A., and Temple S. (2000). "Timing of CNS cell generation: a programmed sequence of neuron and glial cell production from isolated murine cortical stem cells." *Neuron* 28, 69-80.

Rangasamy D., Berven L., Ridgway P., and Tremethick D.J. (2003). "Pericentric heterochromatin becomes enriched with H2A.Z during early mammalian development." *Embo J* 22, 1599-1607.

Redon C., Pilch D., Rogakou E., Sedelnikova O., Newrock K., and Bonner W. (2002). "Histone H2A variants H2AX and H2AZ." *Curr Opin Genet Dev* 12, 162-169.

Reubinoff B.E., Pera M.F., Fong C.Y., Trounson A., and Bongso A. (2000). "Embryonic stem cell lines from human blastocysts: somatic differentiation in vitro." *Nat Biotechnol* 18, 399-404.

Reyes M., Lund T., Lenvik T., Aguiar D., Koodie L., and Verfaillie C.M. (2001). "Purification and ex vivo expansion of postnatal human marrow mesodermal progenitor cells." *Blood* 98, 2615-2625.

Reyes M., and Verfaillie C.M. (2001). "Characterization of multipotent adult progenitor cells, a subpopulation of mesenchymal stem cells." *Ann N Y Acad Sci* 938, 231-233; discussion 233-235.

Richardson R.L., Hausman G.J., and Campion D.R. (1982). "Response of pericytes to thermal lesion in the inguinal fat pad of 10-day-old rats." *Acta Anat (Basel)* 114, 41-57.

Rohm B., Ottemeyer A., Lohrum M., and Puschel A.W. (2000). "Plexin/neuropilin complexes mediate repulsion by the axonal guidance signal semaphorin 3A." *Mech Dev* 93, 95-104.

Rohwedel J., Maltsev V., Bober E., Arnold H.H., Hescheler J., and Wobus A.M. (1994). "Muscle cell differentiation of embryonic stem cells reflects myogenesis in vivo: developmentally regulated expression of myogenic determination genes and functional expression of ionic currents." *Dev Biol* 164, 87-101.

Ronfani L., Ferraguti M., Croci L., Ovitt C.E., Scholer H.R., Consalez G.G., and Bianchi M.E. (2001). "Reduced fertility and spermatogenesis defects in mice lacking chromosomal protein Hmgb2." *Development* 128, 1265-1273.

Ros M.A., Sefton M., and Nieto M.A. (1997). "Slug, a zinc finger gene previously implicated in the early patterning of the mesoderm and the neural crest, is also involved in chick limb development." *Development* 124, 1821-1829.

Ross DT, Scherf U, Eisen MB, Perou CM, Rees C, Spellman P, Iyer V, Jeffrey SS, Van de Rijn M, Waltham M, Pergamenschikov A, Lee JC, Lashkari D, Shalon D, Myers TG, Weinstein JN, Botstein D, Brown PO. (2000) "Systematic variation in gene expression patterns in human cancer cell lines." *Nat Genet* 24(3), 227-235.

Rossant J. (2001). "Stem cells from the Mammalian blastocyst." *Stem Cells* 19, 477-482.

Rowlands D.C., Williams A., Jones N.A., Guest S.S., Reynolds G.M., Barber P.C., and Brown G. (1995). "Stathmin expression is a feature of proliferating cells of most, if not all, cell lineages." *Lab Invest* 72, 100-113.

Saint-Jeannet J.P., He X., Varmus H.E., and Dawid I.B. (1997). "Regulation of dorsal fate in the neuraxis by Wnt-1 and Wnt-3a." *Proc Natl Acad Sci U S A* 94, 13713-13718.

Sanchez-Ramos J., Song S., Cardozo-Pelaez F., Hazzi C., Stedeford T., Willing A., Freeman T.B., Saporta S., Janssen W., Patel N., et al. (2000). "Adult bone marrow stromal cells differentiate into neural cells in vitro." *Exp Neurol* 164, 247-256.

Satoh M., Mioh H., Shiotsu Y., Ogawa Y., and Tamaoki T. (1997). "Mouse bone marrow stromal cell line MC3T3-G2/PA6 with hematopoietic-supporting activity expresses high levels of stem cell antigen Sca-1." *Exp Hematol* 25, 972-979.

- Savagner P. (2001).** "Leaving the neighborhood: molecular mechanisms involved during epithelial-mesenchymal transition." *Bioessays* 23, 912-923.
- Scardigli R., Baumer N., Gruss P., Guillemot F., and Le Roux I. (2003).** "Direct and concentration-dependent regulation of the proneural gene Neurogenin2 by Pax6." *Development* 130, 3269-3281.
- Schafer F.Q., and Buettner G.R. (2001).** "Redox environment of the cell as viewed through the redox state of the glutathione disulfide/glutathione couple." *Free Radic Biol Med* 30, 1191-1212.
- Schena M., Shalon D., Davis R.W., and Brown P.O. (1995).** "Quantitative monitoring of gene expression patterns with a complementary DNA microarray." *Science* 270, 467-470.
- Schlingensiepen K.H., Schlingensiepen R., Kunst M., Klinger I., Gerdes W., Seifert W., and Brysch W. (1993).** "Opposite functions of jun-B and c-jun in growth regulation and neuronal differentiation." *Dev Genet* 14, 305-312.
- Schwab M.E. (2004).** "Nogo and axon regeneration." *Curr Opin Neurobiol* 14, 118-124.
- Schwartz R.E., Reyes M., Koodie L., Jiang Y., Blackstad M., Lund T., Lenvik T., Johnson S., Hu W.S., and Verfaillie C.M. (2002).** "Multipotent adult progenitor cells from bone marrow differentiate into functional hepatocyte-like cells." *J Clin Invest* 109, 1291-1302.
- Schwarz E.J., Alexander G.M., Prockop D.J., and Azizi S.A. (1999).** "Multipotential marrow stromal cells transduced to produce L-DOPA: engraftment in a rat model of Parkinson disease." *Hum Gene Ther* 10, 2539-2549.
- Sekiya I, Vuoristo JT, Larson BL, Prockop DJ. (2002)** "In vitro cartilage formation by human adult stem cells from bone marrow stroma defines the sequence of cellular and molecular events during chondrogenesis." *Proc Natl Acad Sci U S A* 99(7), 4397-4402.
- Sela-Donenfeld D., and Kalcheim C. (1999).** "Regulation of the onset of neural crest migration by coordinated activity of BMP4 and Noggin in the dorsal neural tube." *Development* 126, 4749-4762.
- Shalon D., Smith S.J., and Brown P.O. (1996).** "A DNA microarray system for analyzing complex DNA samples using two-color fluorescent probe hybridization." *Genome Res* 6, 639-645.
- Sharma S.K., and Ebadi M. (2003).** "Metallothionein attenuates 3-morpholinopyridone (SIN-1)-induced oxidative stress in dopaminergic neurons." *Antioxid Redox Signal* 5, 251-264.
- Shepro D., and Morel N.M. (1993).** "Pericyte physiology." *Faseb J* 7, 1031-1038.
- Shindo M., Nakano H., Kuroyanagi H., Shirasawa T., Mihara M., Gilbert D.J., Jenkins N.A., Copeland N.G., Yagita H., and Okumura K. (1998).** "cDNA cloning, expression, subcellular localization, and chromosomal assignment of mammalian aurora homologues, aurora-related kinase (ARK) 1 and 2." *Biochem Biophys Res Commun* 244, 285-292.
- Shook D., and Keller R. (2003).** "Mechanisms, mechanics and function of epithelial-mesenchymal transitions in early development." *Mech Dev* 120, 1351-1383.

Sincock P.M., Fitter S., Parton R.G., Berndt M.C., Gamble J.R., and Ashman L.K. (1999). "PETA-3/CD151, a member of the transmembrane 4 superfamily, is localised to the plasma membrane and endocytic system of endothelial cells, associates with multiple integrins and modulates cell function." *J Cell Sci* 112 (Pt 6), 833-844.

Sincock P.M., Mayrhofer G., and Ashman L.K. (1997). "Localization of the transmembrane 4 superfamily (TM4SF) member PETA-3 (CD151) in normal human tissues: comparison with CD9, CD63, and alpha5beta1 integrin." *J Histochem Cytochem* 45, 515-525.

Skibola C.F., Smith M.T., Hubbard A., Shane B., Roberts A.C., Law G.R., Rollinson S., Roman E., Cartwright R.A., and Morgan G.J. (2002). "Polymorphisms in the thymidylate synthase and serine hydroxymethyltransferase genes and risk of adult acute lymphocytic leukemia." *Blood* 99, 3786-3791.

Smythe G.M., Hodgetts S.I., and Grounds M.D. (2000). "Immunobiology and the future of myoblast transfer therapy." *Mol Ther* 1, 304-313.

Sock E., Schmidt K., Hermanns-Borgmeyer I., Bosl M.R., and Wegner M. (2001). "Idiopathic weight reduction in mice deficient in the high-mobility-group transcription factor Sox8." *Mol Cell Biol* 21, 6951-6959.

Sogawa C.A., Asanuma M., Sogawa N., Miyazaki I., Nakanishi T., Furuta H., and Ogawa N. (2001). "Localization, regulation, and function of metallothionein-III/growth inhibitory factor in the brain." *Acta Med Okayama* 55, 1-9.

Soker S. (2001). "Neuropilin in the midst of cell migration and retraction." *Int J Biochem Cell Biol* 33, 433-437.

Soo K., O'Rourke M.P., Khoo P.L., Steiner K.A., Wong N., Behringer R.R., and Tam P.P. (2002). "Twist function is required for the morphogenesis of the cephalic neural tube and the differentiation of the cranial neural crest cells in the mouse embryo." *Dev Biol* 247, 251-270.

Spellman PT, Sherlock G., Zhang M.Q., Iyer V.R., Anders K., Eisen M.B., Brown P.O., Botstein D., Futcher B. (1998) "Comprehensive identification of cell cycle-regulated genes of the yeast *Saccharomyces cerevisiae* by microarray hybridization." *Mol Biol Cell*. 9(12), 3273-3297.

Spokony R.F., Aoki Y., Saint-Germain N., Magner-Fink E., and Saint-Jeannet J.P. (2002). "The transcription factor Sox9 is required for cranial neural crest development in *Xenopus*." *Development* 129, 421-432.

Spronk C.A., Tessari M., Kaan A.M., Jansen J.F., Vermeulen M., Stunnenberg H.G., and Vuister G.W. (2000). "The Mad1-Sin3B interaction involves a novel helical fold." *Nat Struct Biol* 7, 1100-1104.

Stradal T., Courtney K.D., Rottner K., Hahne P., Small J.V., and Pendergast A.M. (2001). "The Abl interactor proteins localize to sites of actin polymerization at the tips of lamellipodia and filopodia." *Curr Biol* 11, 891-895.

Sun Y., and Oberley L.W. (1996). "Redox regulation of transcriptional activators." *Free Radic Biol Med* 21, 335-348.

Takahashi M., Yamagata M., and Noda M. (1999). "Specific expression of ezrin, a cytoskeletal-membrane linker protein, in a subset of chick retinotectal and sensory projections." *Eur J Neurosci* 11, 545-558.

Takiguchi-Hayashi K. (2001). "In vitro clonal analysis of rat cerebral cortical neurons expressing latexin, a subtype-specific molecular marker of glutamatergic neurons." *Brain Res Dev Brain Res* 132, 87-90.

Tamaki S., Wada H., Ohfuzi K., Shibata T., Masuya M., Kageyama S., Gabazza E.C., Kawakami K., Tsuji K., Miyanishi E., *et al.* (2002). "Hemostatic abnormalities following bone marrow transplantation." *Clin Appl Thromb Hemost* 8, 125-132.

Taraszka K.S., Higgins J.M., Tan K., Mandelbrot D.A., Wang J.H., and Brenner M.B. (2000). "Molecular basis for leukocyte integrin alpha(E)beta(7) adhesion to epithelial (E)-cadherin." *J Exp Med* 191, 1555-1567.

Teh M.T., Wong S.T., Neill G.W., Ghali L.R., Philpott M.P., and Quinn A.G. (2002). "FOXO1 is a downstream target of Gli1 in basal cell carcinomas." *Cancer Res* 62, 4773-4780.

Terada N., Hamazaki T., Oka M., Hoki M., Mastalerz D.M., Nakano Y., Meyer E.M., Morel L., Petersen B.E., and Scott E.W. (2002). "Bone marrow cells adopt the phenotype of other cells by spontaneous cell fusion." *Nature* 416, 542-545.

Theele D.P., and Streit W.J. (1993). "A chronicle of microglial ontogeny." *Glia* 7, 5-8.

Thomas W.E. (1999). "Brain macrophages: on the role of pericytes and perivascular cells." *Brain Res Brain Res Rev* 31, 42-57.

Thomson J.A., Itskovitz-Eldor J., Shapiro S.S., Waknitz M.A., Swiergiel J.J., Marshall V.S., and Jones J.M. (1998). "Embryonic stem cell lines derived from human blastocysts." *Science* 282, 1145-1147.

Toma J.G., Akhavan M., Fernandes K.J., Barnabe-Heider F., Sadikot A., Kaplan D.R., and Miller F.D. (2001). "Isolation of multipotent adult stem cells from the dermis of mammalian skin." *Nat Cell Biol* 3, 778-784.

Tremain N., Korkko J., Ibberson D., Kopen G.C., DiGirolamo C., and Phinney D.G. (2001). "MicroSAGE analysis of 2,353 expressed genes in a single cell-derived colony of undifferentiated human mesenchymal stem cells reveals mRNAs of multiple cell lineages." *Stem Cells* 19, 408-418.

Trinh E., Boutillier A.L., and Loeffler J.P. (2001). "Regulation of the retinoblastoma-dependent Mdm2 and E2F-1 signaling pathways during neuronal apoptosis." *Mol Cell Neurosci* 17, 342-353.

Tzeng S.F. (2003). "Inhibitors of DNA binding in neural cell proliferation and differentiation." *Neurochem Res* 28, 45-52.

Umezumi K., Sugawara N., Chen C., Haber J.E., and Kolodner R.D. (1998). "Genetic analysis of yeast RPA1 reveals its multiple functions in DNA metabolism." *Genetics* 148, 989-1005.

- van der Kooy D., and Weiss S. (2000).** "Why stem cells?" *Science* 287, 1439-1441.
- Vega S.,** Morales A.V., Ocana O.H., Valdes F., Fabregat I., and Nieto M.A. (2004). "Snail blocks the cell cycle and confers resistance to cell death." *Genes Dev* 18, 1131-1143.
- Verbeek M.M.,** Otte-Holler I., Ruiter D.J., and de Waal R.M. (1999). "Human brain pericytes as a model system to study the pathogenesis of cerebrovascular amyloidosis in Alzheimer's disease." *Cell Mol Biol (Noisy-le-grand)* 45, 37-46.
- Vicek S.,** Dechat T., and Foisner R. (2001). "Nuclear envelope and nuclear matrix: interactions and dynamics." *Cell Mol Life Sci* 58, 1758-1765.
- Wagers A.J., and Weissman I.L. (2004).** "Plasticity of adult stem cells." *Cell* 116, 639-648.
- Wakamatsu Y., and Weston J.A. (1997).** "Sequential expression and role of Hu RNA-binding proteins during neurogenesis." *Development* 124, 3449-3460.
- Wakil S.J. (1989).** "Fatty acid synthase, a proficient multifunctional enzyme." *Biochemistry* 28, 4523-4530.
- Wakitani S.,** Saito T., and Caplan A.I. (1995). "Myogenic cells derived from rat bone marrow mesenchymal stem cells exposed to 5-azacytidine." *Muscle Nerve* 18, 1417-1426.
- Walther C., and Gruss P. (1991).** "Pax-6, a murine paired box gene, is expressed in the developing CNS." *Development* 113, 1435-1449.
- Wegiel J., and Wisniewski H.M. (1992).** "Tubuloreticular structures in microglial cells, pericytes and endothelial cells in Alzheimer's disease." *Acta Neuropathol (Berl)* 83, 653-658.
- Weissman I.L. (2000).** "Stem cells: units of development, units of regeneration, and units in evolution." *Cell* 100, 157-168.
- Welm B.E.,** Tepera S.B., Venezia T., Graubert T.A., Rosen J.M., and Goodell M.A. (2002). "Sca-1(pos) cells in the mouse mammary gland represent an enriched progenitor cell population." *Dev Biol* 245, 42-56.
- Whetton A.D., and Graham G.J. (1999).** "Homing and mobilization in the stem cell niche." *Trends Cell Biol* 9, 233-238.
- Wieczorek G,** Steinhoff C, Schulz R, Scheller M, Vingron M, Ropers HH, Nuber UA. "Gene expression profile of mouse bone marrow stromal cells determined by cDNA microarray analysis." *Cell Tissue Res* 311(2), 227-237.
- Wiggan O.,** Fadel M.P., and Hamel P.A. (2002). "Pax3 induces cell aggregation and regulates phenotypic mesenchymal-epithelial interconversion." *J Cell Sci* 115, 517-529.
- Wiles M.V., and Keller G. (1991).** "Multiple hematopoietic lineages develop from embryonic stem (ES) cells in culture." *Development* 111, 259-267.
- Wilkinson K.D.,** Deshpande S., and Larsen C.N. (1992). "Comparisons of neuronal (PGP 9.5) and non-neuronal ubiquitin C-terminal hydrolases." *Biochem Soc Trans* 20, 631-637.

- Wilkinson K.D.**, Lee K.M., Deshpande S., Duerksen-Hughes P., Boss J.M., and Pohl J. (1989). "The neuron-specific protein PGP 9.5 is a ubiquitin carboxyl-terminal hydrolase." *Science* 246, 670-673.
- Wislet-Gendebien S.**, Leprince P., Moonen G., and Rogister B. (2003). "Regulation of neural markers nestin and GFAP expression by cultivated bone marrow stromal cells." *J Cell Sci* 116, 3295-3302.
- Wisniewski H.M.**, Wegiel J., Wang K.C., and Lach B. (1992). "Ultrastructural studies of the cells forming amyloid in the cortical vessel wall in Alzheimer's disease." *Acta Neuropathol (Berl)* 84, 117-127.
- Witmer A.N.**, Vrensen G.F., Van Noorden C.J., and Schlingemann R.O. (2003). "Vascular endothelial growth factors and angiogenesis in eye disease." *Prog Retin Eye Res* 22, 1-29.
- Wobus A.M.**, Kaomei G., Shan J., Wellner M.C., Rohwedel J., Ji G., Fleischmann B., Katus H.A., Hescheler J., and Franz W.M. (1997). "Retinoic acid accelerates embryonic stem cell-derived cardiac differentiation and enhances development of ventricular cardiomyocytes." *J Mol Cell Cardiol* 29, 1525-1539.
- Wolf N.S.** (1999). "The Hematopoietic Microenvironment: Stromal Cell Types: Characterization and Function In Situ and In Vitro." *Hematol* 4, 241-254.
- Wollnik B.**, Tükel T., Uyguner O., Ghanbari A., Kayserili H., Emiroglu M., and Yuksel-Apak M. (2003). "Homozygous and heterozygous inheritance of PAX3 mutations causes different types of Waardenburg syndrome." *Am J Med Genet* 122A, 42-45.
- Wood L.J.**, Mukherjee M., Dolde C.E., Xu Y., Maher J.F., Bunton T.E., Williams J.B., and Resar L.M. (2000). "HMG-I/Y, a new c-Myc target gene and potential oncogene." *Mol Cell Biol* 20, 5490-5502.
- Woodbury D.**, Schwarz E.J., Prockop D.J., and Black I.B. (2000). "Adult rat and human bone marrow stromal cells differentiate into neurons." *J Neurosci Res* 61, 364-370.
- Yabe J.T.**, Chan W.K., Wang F.S., Pimenta A., Ortiz D.D., and Shea T.B. (2003). "Regulation of the transition from vimentin to neurofilaments during neuronal differentiation." *Cell Motil Cytoskeleton* 56, 193-205.
- Yamashita J.**, Itoh H., Hirashima M., Ogawa M., Nishikawa S., Yurugi T., Naito M., and Nakao K. (2000). "Flk1-positive cells derived from embryonic stem cells serve as vascular progenitors." *Nature* 408, 92-96.
- Yamauchi M.**, Yamauchi N., and Meuth M. (1990). "Molecular cloning of the human CTP synthetase gene by functional complementation with purified human metaphase chromosomes." *Embo J* 9, 2095-2099.
- Yamazaki F.**, Nagatsuka Y., Shirakawa H., and Yoshida M. (1995). "Repression of cell cycle progression by antisense HMG2 RNA." *Biochem Biophys Res Commun* 210, 1045-1051.
- Yan R.T.**, Ma W.X., and Wang S.Z. (2001). "neurogenin2 elicits the genesis of retinal neurons from cultures of nonneural cells." *Proc Natl Acad Sci U S A* 98, 15014-15019.

- Yan Y.**, Narayanan V., and Lagenaur C. (1996). "Expression of members of the proteolipid protein gene family in the developing murine central nervous system." *J Comp Neurol* 370, 465-478.
- Yanfeng W.**, Saint-Jeannet J.P., and Klein P.S. (2003). "Wnt-frizzled signaling in the induction and differentiation of the neural crest." *Bioessays* 25, 317-325.
- Ying Q.L.**, Nichols J., Evans E.P., and Smith A.G. (2002). "Changing potency by spontaneous fusion." *Nature* 416, 545-548.
- You H.J.**, Oh D.H., Choi C.Y., Lee D.G., Hahm K.S., Moon A.R., and Jeong H.G. (2002). "Protective effect of metallothionein-III on DNA damage in response to reactive oxygen species." *Biochim Biophys Acta* 1573, 33-38.
- Yuan P.X.**, Huang L.D., Jiang Y.M., Gutkind J.S., Manji H.K., and Chen G. (2001). "The mood stabilizer valproic acid activates mitogen-activated protein kinases and promotes neurite growth." *J Biol Chem* 276, 31674-31683.
- Zazzi H.**, Nikoshkov A., Hall K., and Luthman H. (1998). "Structure and transcription regulation of the human insulin-like growth factor binding protein 4 gene (IGFBP4)." *Genomics* 49, 401-410.
- Zhao L.**, Gregoire F., and Sul H.S. (2000). "Transient induction of ENC-1, a Kelch-related actin-binding protein, is required for adipocyte differentiation." *J Biol Chem* 275, 16845-16850.
- Zhu Y.**, Jin K., Mao X.O., and Greenberg D.A. (2003). "Vascular endothelial growth factor promotes proliferation of cortical neuron precursors by regulating E2F expression." *Faseb J* 17, 186-193.
- Zimmerman L.B.**, De Jesus-Escobar J.M., and Harland R.M. (1996). "The Spemann organizer signal noggin binds and inactivates bone morphogenetic protein 4." *Cell* 86, 599-606.
- Zirlinger M.**, Lo L., McMahon J., McMahon A.P., and Anderson D.J. (2002). "Transient expression of the bHLH factor neurogenin-2 marks a subpopulation of neural crest cells biased for a sensory but not a neuronal fate." *Proc Natl Acad Sci U S A* 99, 8084-8089.
- Zou H.**, McGarry T.J., Bernal T., and Kirschner M.W. (1999). "Identification of a vertebrate sister-chromatid separation inhibitor involved in transformation and tumorigenesis." *Science* 285, 418-422.

7.2 Danksagung

Mein Dank gilt Herrn Professor Dr. H.-Hilger Ropers für die Überlassung des Promotionsthemas und die Unterstützung während der Durchführung dieser Arbeit. Herrn Professor Dr. Fritz G. Rathjen danke ich für die Übernahme des Korreferats seitens der Freien Universität Berlin.

Frau Dr. Ulrike Nuber danke ich für unermüdlichen Einsatz und eine aufregende und lehrreiche Zeit in ihrer Arbeitsgruppe. Bettina Lipkowitz danke ich für praktische Hilfe und ihre Unterstützung. Ralph Schulz für seine stets gute Laune und praktische Hilfe. Herrn Dr. Fikret Erdogan danke ich für seinen Glauben, Ines Müller für leckere Äpfel.

Frau Dr. Christine Steinhoff danke ich dafür, Ordnung in Datenberge zu bekommen, Frau Dr. Marina Scheller und Kristin Hartmann für die FACS- und Patch-Clamp-Analysen.

Susanne Freier und Hannelore Madle danke ich für die Vermittlung der Grundlagen des Arbeitens in der Zellkultur und manch lustige Stunde ebendort.

Frau Dr. Constance Scharff danke ich für das Korrekturlesen dieser Arbeit. Herrn Dr. Andreas Tzschach ebenfalls, außerdem für seine Kollegialität, Tennisstunden und „Schwarzgebrannten“.

Im Besonderen aber gilt mein Dank allen, die mich in dieser Zeit unterstützt und mit mir durchgehalten haben: meinen Eltern, meinen Geschwistern, meinen Freunden und vor allem meiner Frau Christiane.

7.3 Lebenslauf

Name: Georg Manfred Wieczorek
 Geburtsdatum: 21.03.1974
 Geburtsort: Krefeld
 Familienstand: verheiratet, ein Kind
 Staatsangehörigkeit: Deutsch

Hochschulausbildung

Promotionsvorhaben:

04/2001-09/2004 Doktorarbeit am Max-Planck-Institut für Molekulare Genetik, Berlin
 Titel: „Genexpressionsanalysen muriner Knochenmarkstromazellen und ihrer neuronalen Differenzierung“

Studium:

10/1994 – 11/2000 Rheinische Friedrich-Wilhelms Universität Bonn
 Studium der Biologie (bis 10/96 auf Lehramt)
 Schwerpunkte: Neurobiologie, Genetik, Ökologie

Diplomarbeit am Max-Planck-Institut für Molekulare Genetik, Berlin
 Titel: „Untersuchung der X-Inaktivierung beim Menschen mit X-Chromosom-spezifischen cDNS-Chips“

Abschluß: Diplom-Biologe (Note: sehr gut 1,4)

Auslandsstudium:

08/1998 – 06/1999 Studium an der Universität Lund (Schweden)
 Kurse in Prokaryoten- und Eukaryoten-Genetik

03/1999 – 06/1999 Selbständiges wissenschaftliches Projekt
 (sog. „Examensarbeit“):
 „The mitochondrial genome of the wombat (*Vombatus ursinus*) –
 Initiating a molecular systematics study“ (Note: excellent)

Zivildienst

08/1993 – 10/1994 Mobiler sozialer Hilfsdienst,
 Evangelische Kirchengemeinde Mönchengladbach-Großheide

Schulausbildung

08/1984 – 06/1993 Stiftisch-Humanistisches Gymnasium, Mönchengladbach
Abschluß: Abitur (Note: 1,5)

03/1990 – 04/1990 Schüleraustausch mit der Fulbright-Stiftung an die
Titusville High School, Florida, USA

08/1980 – 06/1984 Katholische Grundschule Mönchengladbach-Venn

Sprachen: Englisch, Französisch, Schwedisch, Latein

Publikationen:

Wieczorek G, Steinhoff C, Lipkowitz B, Vingron M, Ropers HH, Nuber UA.

“Identification of molecular changes underlying the neuronal differentiation of bone marrow stromal cells using cDNA microarrays.” Manuskript in Vorbereitung.

Wieczorek G, Steinhoff C, Schulz R, Scheller M, Vingron M, Ropers HH, Nuber UA.

“Gene expression profile of mouse bone marrow stromal cells determined by cDNA microarray analysis.” Cell Tissue Res. 2003 Feb;311(2):227-37. Epub 2003 Jan 31.

Janke A, Magnell O, **Wieczorek G**, Westerman M, Arnason U.

“Phylogenetic analysis of 18S rRNA and the mitochondrial genomes of the wombat, *Vombatus ursinus*, and the spiny anteater, *Tachyglossus aculeatus*: increased support for the Marsupionta hypothesis.” J Mol Evol. 2002 Jan;54(1):71-80.

Sudbrak R*, **Wieczorek G***, Nuber UA, Mann W, Kirchner R, Erdogan F, Brown CJ, Wohrle D, Sterk P, Kalscheuer VM, Berger W, Lehrach H, Ropers HH

“X chromosome-specific cDNA arrays: identification of genes that escape from X-inactivation and other applications.” Hum Mol Genet. 2001 Jan 1;10(1):77-83.

Abstracts/Poster:

Georg Wieczorek, C Steinhoff, B Lipkowitz, A Draguhn, K Hartmann, HH Ropers, UA Nuber.

“Differentiation of Bone Marrow Stromal Cells into cells with neural characteristics: Identification of underlying molecular changes with cDNA microarrays.”

Keystone Symposium B3 “Stem cells”, Keystone, Colorado, USA, Jan. 2004

Georg Wieczorek, C Steinhoff, B Lipkowitz, A Draguhn, K Hartmann, HH Ropers, UA Nuber.

“Gene expression changes during the differentiation of mouse bone marrow stromal cells into cells with neural characteristics.”

FENS/Hertie Foundation Winterschool 2003 “Neural stem cells: From specification and nervous system patterning to therapies for neurodegenerative diseases”, Kitzbühel, Österreich, Dez. 2003

Georg Wieczorek, C Steinhoff, R Schulz, M Scheller, M Vingron, HH Ropers and UA Nuber.

“Gene expression profile of mouse bone marrow stromal cells determined by cDNA microarray analysis.” EJCB Suppl. 53 Vol. 82 2003, Jahrestagung der Deutschen Gesellschaft für Zellbiologie und der

Gesellschaft für Entwicklungsbiologie, Bonn, März 2003

Georg Wieczorek, U Gurok, C Scharff, C Steinhoff, M Vingron, HH Ropers, UA Nuber.

“Gene Expression Changes in Stem Cell Differentiation studied with DNA Microarrays.” 13. Jahrestagung der Deutschen Gesellschaft für Humangenetik, Leipzig, Sept. 2002

7.4 Eidstattliche Erklärung

Hiermit erkläre ich, die vorliegende Arbeit selbständig und ohne unerlaubte Hilfe angefertigt zu haben und alle Hilfsmittel und Inhalte aus anderen Quellen als solche kenntlich gemacht zu haben. Des weiteren versichere ich, daß die vorliegende Arbeit nie Gegenstand eines früheren Promotionsverfahrens war.

Berlin, den

.....