

## 8.4. Referenzen

- Abremski K. und Hoess R. (1984) Bacteriophage P1 site-specific recombination. Purification and properties of the Cre recombinase protein. *J. Biol. Chem.* **259**, 1509-1514.
- Abremski K., Hoess R. und Sternberg N. (1983) Studies on the properties of P1 site-specific recombination: evidence for topologically unlinked products following recombination. *Cell* **32**, 1301-1311.
- Agorogiannis E.I., Agorogiannis G.I., Papadimitriou A. und Hadjigeorgiou G.M. (2004) Protein misfolding in neurodegenerative diseases. *Neuropathol. Appl. Neurobiol.* **30**, 215-224.
- Akagi K., Sandig V., Vooijs M., Van d., V, Giovannini M., Strauss M. und Berns A. (1997) Cre-mediated somatic site-specific recombination in mice. *Nucleic Acids Res.* **25**, 1766-1773.
- Allen N.J. und Barres B.A. (2005) Signaling between glia and neurons: focus on synaptic plasticity. *Curr. Opin. Neurobiol.* **15**, 542-548.
- Antoch M.P., Song E.J., Chang A.M., Vitaterna M.H., Zhao Y., Wilsbacher L.D., Sangoram A.M., King D.P., Pinto L.H. und Takahashi J.S. (1997) Functional identification of the mouse circadian Clock gene by transgenic BAC rescue. *Cell* **89**, 655-667.
- Araki K., Araki M., Miyazaki J. und Vassalli P. (1995) Site-specific recombination of a transgene in fertilized eggs by transient expression of Cre recombinase. *Proc. Natl. Acad. Sci. U. S. A* **92**, 160-164.
- Araque A., Parpura V., Sanzgiri R.P. und Haydon P.G. (1999) Tripartite synapses: glia, the unacknowledged partner. *Trends Neurosci.* **22**, 208-215.
- Argos P., Landy A., Abremski K., Egan J.B., Haggard-Ljungquist E., Hoess R.H., Kahn M.L., Kalionis B., Narayana S.V., Pierson L.S., III und . (1986) The integrase family of site-specific recombinases: regional similarities and global diversity. *EMBO J.* **5**, 433-440.
- Bachoo R.M., Kim R.S., Ligon K.L., Maher E.A., Brennan C., Billings N., Chan S., Li C., Rowitch D.H., Wong W.H. und DePinho R.A. (2004) Molecular diversity of astrocytes with implications for neurological disorders. *Proc. Natl. Acad. Sci. U. S. A* **101**, 8384-8389.
- Barski J.J., Dethleffsen K. und Meyer M. (2000) Cre recombinase expression in cerebellar Purkinje cells. *Genesis* **28**, 93-98.
- Baum C. und Fehse B. (2003) Mutagenesis by retroviral transgene insertion: risk assessment and potential alternatives. *Curr. Opin. Mol. Ther.* **5**, 458-462.
- Baumann N. und Pham-Dinh D. (2001) Biology of oligodendrocyte and myelin in the mammalian central nervous system. *Physiol Rev.* **81**, 871-927.
- Beck J.A., Lloyd S., Hafezparast M., Lennon-Pierce M., Eppig J.T., Festing M.F. und Fisher E.M. (2000) Genealogies of mouse inbred strains. *Nat. Genet.* **24**, 23-25.
- Belachew S., Yuan X. und Gallo V. (2001) Unraveling oligodendrocyte origin and function by cell-specific transgenesis. *Dev. Neurosci.* **23**, 287-298.

- Bellamy T.C. und Ogden D. (2006) Long-term depression of neuron to glial signalling in rat cerebellar cortex. *Eur. J. Neurosci.* **23**, 581-586.
- Benarroch E.E. (2005) Neuron-astrocyte interactions: partnership for normal function and disease in the central nervous system. *Mayo Clin. Proc.* **80**, 1326-1338.
- Berger T., Schnitzer J. und Kettenmann H. (1991) Developmental changes in the membrane current pattern, K<sup>+</sup> buffer capacity, and morphology of glial cells in the corpus callosum slice. *J. Neurosci.* **11**, 3008-3024.
- Bergles D.E., Diamond J.S. und Jahr C.E. (1999) Clearance of glutamate inside the synapse and beyond. *Curr. Opin. Neurobiol.* **9**, 293-298.
- Bergmann C. (1875) Notiz über einige Strukturverhältnisse des Cerebellum und des Rückenmarks. *Z Rationelle Med* 360-363.
- Besnard F., Brenner M., Nakatani Y., Chao R., Purohit H.J. und Freese E. (1991) Multiple interacting sites regulate astrocyte-specific transcription of the human gene for glial fibrillary acidic protein. *J. Biol. Chem.* **266**, 18877-18883.
- Bezzi P., Gundersen V., Galbete J.L., Seifert G., Steinhauser C., Pilati E. und Volterra A. (2004) Astrocytes contain a vesicular compartment that is competent for regulated exocytosis of glutamate. *Nat. Neurosci.* **7**, 613-620.
- Birnboim H.C. und Doly J. (1979) A rapid alkaline extraction procedure for screening recombinant plasmid DNA. *Nucleic Acids Res.* **7**, 1513-1523.
- Bishop J.O. und Smith P. (1989) Mechanism of chromosomal integration of microinjected DNA. *Mol. Biol. Med* **6**, 283-298.
- Bockamp E., Maringer M., Spangenberg C., Fees S., Fraser S., Eshkind L., Oesch F. und Zabel B. (2002) Of mice and models: improved animal models for biomedical research. *Physiol Genomics* **11**, 115-132.
- Borges K. und Dingledine R. (1998) AMPA receptors: molecular and functional diversity. *Prog. Brain Res.* **116**, 153-170.
- Boyden E.S., Zhang F., Bamberg E., Nagel G. und Deisseroth K. (2005) Millisecond-timescale, genetically targeted optical control of neural activity. *Nat. Neurosci.* **8**, 1263-1268.
- Brenner M. und Messing A. (1996) GFAP Transgenic Mice. *Methods* **10**, 351-364.
- Brenner M., Kisseberth W.C., Su Y., Besnard F. und Messing A. (1994) GFAP promoter directs astrocyte-specific expression in transgenic mice. *J. Neurosci.* **14**, 1030-1037.
- Brocard J., Warot X., Wendling O., Messaddeq N., Vonesch J.L., Chambon P. und Metzger D. (1997) Spatio-temporally controlled site-specific somatic mutagenesis in the mouse. *Proc. Natl. Acad. Sci. U. S. A* **94**, 14559-14563.
- Brocard J., Feil R., Chambon P. und Metzger D. (1998) A chimeric Cre recombinase inducible by synthetic, but not by natural ligands of the glucocorticoid receptor. *Nucleic Acids Res.* **26**, 4086-4090.
- Buniatian G.H., Hartmann H.J., Traub P., Weser U., Wiesinger H. und Gebhardt R. (2001) Acquisition of blood-tissue barrier-supporting features by hepatic stellate cells and astrocytes of myofibroblastic phenotype. Inverse dynamics of

- metallothionein and glial fibrillary acidic protein expression. *Neurochem. Int.* **38**, 373-383.
- Burnashev N., Khodorova A., Jonas P., Helm P.J., Wisden W., Monyer H., Seeburg P.H. und Sakmann B. (1992) Calcium-permeable AMPA-kainate receptors in fusiform cerebellar glial cells. *Science* **256**, 1566-1570.
- Campbell R.E., Tour O., Palmer A.E., Steinbach P.A., Baird G.S., Zacharias D.A. und Tsien R.Y. (2002) A monomeric red fluorescent protein. *Proc. Natl. Acad. Sci. U. S. A* **99**, 7877-7882.
- Capecchi M.R. (1989) Altering the genome by homologous recombination. *Science* **244**, 1288-1292.
- Caroni P. (1997) Overexpression of growth-associated proteins in the neurons of adult transgenic mice. *J. Neurosci. Methods* **71**, 3-9.
- Casanova E., Fehsenfeld S., Lemberger T., Shimshek D.R., Sprengel R. und Mantamadiotis T. (2002) ER-based double iCre fusion protein allows partial recombination in forebrain. *Genesis* **34**, 208-214.
- Casper K.B. und McCarthy K.D. (2006) GFAP-positive progenitor cells produce neurons and oligodendrocytes throughout the CNS. *Mol. Cell Neurosci.*
- Caudle R.M. (2006) Memory in astrocytes: a hypothesis. *Theor. Biol. Med Model.* **3**, 2.
- Chalifour L.E., Gomes M.L., Wang N.S. und Mes-Masson A.M. (1990) Polyomavirus large T-antigen expression in heart of transgenic mice causes cardiomyopathy. *Oncogene* **5**, 1719-1726.
- Chaudhry F.A., Lehre K.P., van Lookeren C.M., Ottersen O.P., Danbolt N.C. und Storm-Mathisen J. (1995) Glutamate transporters in glial plasma membranes: highly differentiated localizations revealed by quantitative ultrastructural immunocytochemistry. *Neuron* **15**, 711-720.
- Choi T., Huang M., Gorman C. und Jaenisch R. (1991) A generic intron increases gene expression in transgenic mice. *Mol. Cell Biol.* **11**, 3070-3074.
- Christopherson K.S., Ullian E.M., Stokes C.C., Mullowney C.E., Hell J.W., Agah A., Lawler J., Mosher D.F., Bornstein P. und Barres B.A. (2005) Thrombospondins are astrocyte-secreted proteins that promote CNS synaptogenesis. *Cell* **120**, 421-433.
- Clark B.A. und Barbour B. (1997) Currents evoked in Bergmann glial cells by parallel fibre stimulation in rat cerebellar slices. *J. Physiol.* **502**, 335-350.
- Clark A.J., Bissinger P., Bullock D.W., Damak S., Wallace R., Whitelaw C.B. und Yull F. (1994) Chromosomal position effects and the modulation of transgene expression. *Reprod. Fertil. Dev.* **6**, 589-598.
- Colognato H., Baron W., Avellana-Adalid V., Relvas J.B., Baron-Van Evercooren A., Georges-Labouesse E. und ffrench-Constant C. (2002) CNS integrins switch growth factor signalling to promote target-dependent survival. *Nat. Cell Biol.* **4**, 833-841.
- Cosgaya J.M., Chan J.R. und Shooter E.M. (2002) The neurotrophin receptor p75NTR as a positive modulator of myelination. *Science* **298**, 1245-1248.
- Cotrina M.L. und Nedergaard M. (2002) Astrocytes in the aging brain. *J. Neurosci. Res.* **67**, 1-10.

- Cui W., Allen N.D., Skynner M., Gusterson B. und Clark A.J. (2001) Inducible ablation of astrocytes shows that these cells are required for neuronal survival in the adult brain. *Glia* **34**, 272-282.
- Danbolt N.C. (2001) Glutamate uptake. *Prog. Neurobiol.* **65**, 1-105.
- Danielian P.S., Muccino D., Rowitch D.H., Michael S.K. und McMahon A.P. (1998) Modification of gene activity in mouse embryos in utero by a tamoxifen-inducible form of Cre recombinase. *Curr. Biol.* **8**, 1323-1326.
- Day N.C., Williams T.L., Ince P.G., Kamboj R.K., Lodge D. und Shaw P.J. (1995) Distribution of AMPA-selective glutamate receptor subunits in the human hippocampus and cerebellum. *Brain Res. Mol. Brain Res.* **31**, 17-32.
- Deitmer J.W., Verkhratsky A.J. und Lohr C. (1998) Calcium signalling in glial cells. *Cell Calcium* **24**, 405-416.
- Dermietzel R., Traub O., Hwang T.K., Beyer E., Bennett M.V., Spray D.C. und Willecke K. (1989) Differential expression of three gap junction proteins in developing and mature brain tissues. *Proc. Natl. Acad. Sci. U. S. A* **86**, 10148-10152.
- De Zeeuw C.I. und Yeo C.H. (2005) Time and tide in cerebellar memory formation. *Curr. Opin. Neurobiol.* **15**, 667-674.
- Doerflinger N.H., Macklin W.B. und Popko B. (2003) Inducible site-specific recombination in myelinating cells. *Genesis* **35**, 63-72.
- Doetschman T., Gregg R.G., Maeda N., Hooper M.L., Melton D.W., Thompson S. und Smithies O. (1987) Targetted correction of a mutant HPRT gene in mouse embryonic stem cells. *Nature* **330**, 576-578.
- Donato R. (2001) S100: a multigenic family of calcium-modulated proteins of the EF-hand type with intracellular and extracellular functional roles. *Int. J. Biochem. Cell Biol.* **33**, 637-668.
- Dringen R. und Hirrlinger J. (2003) Glutathione pathways in the brain. *Biol. Chem.* **384**, 505-516.
- Dynan W.S. (1989) Modularity in promoters and enhancers. *Cell* **58**, 1-4.
- el Marjou F., Janssen K.P., Chang B.H., Li M., Hindie V., Chan L., Louvard D., Chambon P., Metzger D. und Robine S. (2004) Tissue-specific and inducible Cre-mediated recombination in the gut epithelium. *Genesis* **39**, 186-193.
- Fawcett J.W. und Asher R.A. (1999) The glial scar and central nervous system repair. *Brain Res. Bull.* **49**, 377-391.
- Feil R., Brocard J., Mascrez B., LeMeur M., Metzger D. und Chambon P. (1996) Ligand-activated site-specific recombination in mice. *Proc. Natl. Acad. Sci. U. S. A* **93**, 10887-10890.
- Feil R., Wagner J., Metzger D. und Chambon P. (1997) Regulation of Cre recombinase activity by mutated estrogen receptor ligand-binding domains. *Biochem. Biophys. Res. Commun.* **237**, 752-757.
- Feng G., Mellor R.H., Bernstein M., Keller-Peck C., Nguyen Q.T., Wallace M., Nerbonne J.M., Lichtman J.W. und Sanes J.R. (2000) Imaging neuronal subsets in transgenic mice expressing multiple spectral variants of GFP. *Neuron* **28**, 41-51.

- Finley K.R., Davidson A.E. und Ekker S.C. (2001) Three-color imaging using fluorescent proteins in living zebrafish embryos. *Biotechniques* **31**, 66-70, 72.
- Fradkov A.F., Chen Y., Ding L., Barsova E.V., Matz M.V. und Lukyanov S.A. (2000) Novel fluorescent protein from Discosoma coral and its mutants possesses a unique far-red fluorescence. *FEBS Lett.* **479**, 127-130.
- Friede R.L. (1972) Control of myelin formation by axon caliber (with a model of the control mechanism). *J. Comp Neurol.* **144**, 233-252.
- Funfschilling U. und Reichardt L.F. (2002) Cre-mediated recombination in rhombic lip derivatives. *Genesis*. **33**, 160-169.
- Fuss B., Mallon B., Phan T., Ohlemeyer C., Kirchhoff F., Nishiyama A. und Macklin W.B. (2000) Purification and analysis of in vivo-differentiated oligodendrocytes expressing the green fluorescent protein. *Dev. Biol.* **218**, 259-274.
- Garcia A.D., Doan N.B., Imura T., Bush T.G. und Sofroniew M.V. (2004) GFAP-expressing progenitors are the principal source of constitutive neurogenesis in adult mouse forebrain. *Nat. Neurosci.* **7**, 1233-1241.
- Garcia-Otin A.L. und Guillou F. (2006) Mammalian genome targeting using site-specific recombinases. *Frontiers in Bioscience* **11**, 1108-1136.
- Goebbels S., Bode U., Pieper A., Funfschilling U., Schwab M.H. und Nave K.A. (2005) Cre/loxP-mediated inactivation of the bHLH transcription factor gene NeuroD/BETA2. *Genesis*. **42**, 247-252.
- Gong S., Zheng C., Doughty M.L., Losos K., Didkovsky N., Schambra U.B., Nowak N.J., Joyner A., Leblanc G., Hatten M.E. und Heintz N. (2003) A gene expression atlas of the central nervous system based on bacterial artificial chromosomes. *Nature* **425**, 917-925.
- Gordon J.W. und Ruddle F.H. (1981) Integration and stable germ line transmission of genes injected into mouse pronuclei. *Science* **214**, 1244-1246.
- Gordon J.W. und Ruddle F.H. (1983) Gene transfer into mouse embryos: production of transgenic mice by pronuclear injection. *Methods Enzymol.* **101**, 411-433.
- Gordon J.W., Scangos G.A., Plotkin D.J., Barbosa J.A. und Ruddle F.H. (1980) Genetic transformation of mouse embryos by microinjection of purified DNA. *Proc. Natl. Acad. Sci. U. S. A* **77**, 7380-7384.
- Goritz C., Mauch D.H., Nagler K. und Pfrieger F.W. (2002) Role of glia-derived cholesterol in synaptogenesis: new revelations in the synapse-glia affair. *J. Physiol Paris* **96**, 257-263.
- Gossen M. und Bujard H. (1992) Tight control of gene expression in mammalian cells by tetracycline-responsive promoters. *Proc. Natl. Acad. Sci. U. S. A* **89**, 5547-5551.
- Graham L.D. (2002) Ecdysone-controlled expression of transgenes. *Expert. Opin. Biol. Ther.* **2**, 525-535.
- Grass D., Pawlowski P.G., Hirrlinger J., Papadopoulos N., Richter D.W., Kirchhoff F. und Hulsmann S. (2004) Diversity of functional astroglial properties in the respiratory network. *J. Neurosci.* **24**, 1358-1365.

- Grosche J., Matyash V., Moller T., Verkhratsky A., Reichenbach A. und Kettenmann H. (1999) Microdomains for neuron-glia interaction: parallel fiber signaling to Bergmann glial cells. *Nat. Neurosci.* **2**, 139-143.
- Grosche J., Kettenmann H. und Reichenbach A. (2002) Bergmann glial cells form distinct morphological structures to interact with cerebellar neurons. *J. Neurosci. Res.* **68**, 138-149.
- Gross L.A., Baird G.S., Hoffman R.C., Baldridge K.K. und Tsien R.Y. (2000) The structure of the chromophore within DsRed, a red fluorescent protein from coral. *Proc. Natl. Acad. Sci. U. S. A* **97**, 11990-11995.
- Gu H., Zou Y.R. und Rajewsky K. (1993) Independent control of immunoglobulin switch recombination at individual switch regions evidenced through Cre-loxP-mediated gene targeting. *Cell* **73**, 1155-1164.
- Gu H., Marth J.D., Orban P.C., Mossman H. und Rajewsky K. (1994) Deletion of a DNA polymerase beta gene segment in T cells using cell type-specific gene targeting. *Science* **265**, 103-106.
- Guo C., Yang W. und Lobe C.G. (2002) A Cre recombinase transgene with mosaic, widespread tamoxifen-inducible action. *Genesis* **32**, 8-18.
- Gurskaya N.G., Fradkov A.F., Terskikh A., Matz M.V., Labas Y.A., Martynov V.I., Yanushevich Y.G., Lukyanov K.A. und Lukyanov S.A. (2001) GFP-like chromoproteins as a source of far-red fluorescent proteins. *FEBS Lett.* **507**, 16-20.
- Guy J., Hendrich B., Holmes M., Martin J.E. und Bird A. (2001) A mouse MeCP2-null mutation causes neurological symptoms that mimic Rett syndrome. *Nat. Genet.* **27**, 322-326.
- Hachem S., Aguirre A., Vives V., Marks A., Gallo V. und Legraverend C. (2005) Spatial and temporal expression of S100B in cells of oligodendrocyte lineage. *Glia* **51**, 81-97.
- Hadjantonakis A.K. und Nagy A. (2001) The color of mice: in the light of GFP-variant reporters. *Histochem. Cell Biol.* **115**, 49-58.
- Hadjantonakis A.K., Macmaster S. und Nagy A. (2002) Embryonic stem cells and mice expressing different GFP variants for multiple non-invasive reporter usage within a single animal. *BMC. Biotechnol.* **2**, 11.
- Hadjantonakis A.K., Dickinson M.E., Fraser S.E. und Papaioannou V.E. (2003) Technicolour transgenics: imaging tools for functional genomics in the mouse. *Nat. Rev. Genet.* **4**, 613-625.
- Hamilton D.L. und Abremski K. (1984) Site-specific recombination by the bacteriophage P1 lox-Cre system. Cre-mediated synapsis of two lox sites. *J. Mol. Biol.* **178**, 481-486.
- Hamprecht B. und Loffler F. (1985) Primary glial cultures as a model for studying hormone action. *Methods Enzymol.* **109**, 341-345.
- Hatten M.E. (1990) Riding the glial monorail: a common mechanism for glial-guided neuronal migration in different regions of the developing mammalian brain. *Trends Neurosci.* **13**, 179-184.

- Hausser M., Raman I.M., Otis T., Smith S.L., Nelson A., du L.S., Loewenstein Y., Mahon S., Pennartz C., Cohen I. und Yarom Y. (2004) The beat goes on: spontaneous firing in mammalian neuronal microcircuits. *J. Neurosci.* **24**, 9215-9219.
- Hayashi S. und McMahon A.P. (2002) Efficient recombination in diverse tissues by a tamoxifen-inducible form of Cre: a tool for temporally regulated gene activation/inactivation in the mouse. *Dev. Biol.* **244**, 305-318.
- Haydon P.G. (2001) GLIA: listening and talking to the synapse. *Nat. Rev. Neurosci.* **2**, 185-193.
- Heales S.J., Lam A.A., Duncan A.J. und Land J.M. (2004) Neurodegeneration or neuroprotection: the pivotal role of astrocytes. *Neurochem. Res.* **29**, 513-519.
- Heck D. und Sultan F. (2002) Cerebellar structure and function: making sense of parallel fibers. *Hum. Mov Sci.* **21**, 411-421.
- Heim R. und Tsien R.Y. (1996) Engineering green fluorescent protein for improved brightness, longer wavelengths and fluorescence resonance energy transfer. *Curr. Biol.* **6**, 178-182.
- Heim R., Prasher D.C. und Tsien R.Y. (1994) Wavelength mutations and posttranslational autoxidation of green fluorescent protein. *Proc. Natl. Acad. Sci. U. S. A* **91**, 12501-12504.
- Heim R., Cubitt A.B. und Tsien R.Y. (1995) Improved green fluorescence. *Nature* **373**, 663-664.
- Heintz N. (2001) BAC to the future: the use of bac transgenic mice for neuroscience research. *Nat. Rev. Neurosci.* **2**, 861-870.
- Hirrlinger J., Hulsmann S. und Kirchhoff F. (2004) Astroglial processes show spontaneous motility at active synaptic terminals in situ. *Eur. J. Neurosci.* **20**, 2235-2239.
- Hirrlinger P.G., Scheller A., Braun C., Quintela-Schneider M., Fuss B., Hirrlinger J. und Kirchhoff F. (2005) Expression of reef coral fluorescent proteins in the central nervous system of transgenic mice. *Mol. Cell Neurosci.* **30**, 291-303.
- Hirrlinger P.G., Scheller A., Braun C., Hirrlinger J. und Kirchhoff F. (2006) Temporal control of gene recombination in astrocytes by transgenic expression of the tamoxifen-inducible DNA recombinase variant CreERT2. *Glia* (Im Druck).
- Hirt H., Kimelman J., Birnbaum M.J., Chen E.Y., Seeburg P.H., Eberhardt N.L. und Barta A. (1987) The human growth hormone gene locus: structure, evolution, and allelic variations. *DNA* **6**, 59-70.
- Hoess R.H., Wierzbicki A. und Abremski K. (1986) The role of the loxP spacer region in P1 site-specific recombination. *Nucleic Acids Res.* **14**, 2287-2300.
- Hoess R., Wierzbicki A. und Abremski K. (1987) Isolation and characterization of intermediates in site-specific recombination. *Proc. Natl. Acad. Sci. U. S. A* **84**, 6840-6844.
- Hollmann M., Hartley M. und Heinemann S. (1991) Ca<sup>2+</sup> permeability of KA-AMPA-gated glutamate receptor channels depends on subunit composition. *Science* **252**, 851-853.

- Horwich A. (2002) Protein aggregation in disease: a role for folding intermediates forming specific multimeric interactions. *J. Clin. Invest.* **110**, 1221-1232.
- Huang M.T. und Gorman C.M. (1990) Intervening sequences increase efficiency of RNA 3' processing and accumulation of cytoplasmic RNA. *Nucleic Acids Res.* **18**, 937-947.
- Hunter N.L., Awatramani R.B., Farley F.W. und Dymecki S.M. (2005) Ligand-activated Flpe for temporally regulated gene modifications. *Genesis*. **41**, 99-109.
- Iino M., Goto K., Kakegawa W., Okado H., Sudo M., Ishiuchi S., Miwa A., Takayasu Y., Saito I., Tsuzuki K. und Ozawa S. (2001) Glia-synapse interaction through Ca<sup>2+</sup>-permeable AMPA receptors in Bergmann glia. *Science* **292**, 926-929.
- Imai T., Jiang M., Chambon P. und Metzger D. (2001) Impaired adipogenesis and lipolysis in the mouse upon selective ablation of the retinoid X receptor alpha mediated by a tamoxifen-inducible chimeric Cre recombinase (Cre-ERT2) in adipocytes. *Proc. Natl. Acad. Sci. U. S. A* **98**, 224-228.
- Indra A.K., Warot X., Brocard J., Bornert J.M., Xiao J.H., Chambon P. und Metzger D. (1999) Temporally-controlled site-specific mutagenesis in the basal layer of the epidermis: comparison of the recombinase activity of the tamoxifen-inducible Cre-ER(T) and Cre-ER(T2) recombinases. *Nucleic Acids Res.* **27**, 4324-4327.
- Inoue H., Nojima H. und Okayama H. (1990) High efficiency transformation of *Escherichia coli* with plasmids. *Gene* **96**, 23-28.
- Jach G., Binot E., Frings S., Luxa K. und Schell J. (2001) Use of red fluorescent protein from *Discosoma* sp. (dsRED) as a reporter for plant gene expression. *Plant J.* **28**, 483-491.
- Jarrett J.T. und Lansbury P.T., Jr. (1993) Seeding "one-dimensional crystallization" of amyloid: a pathogenic mechanism in Alzheimer's disease and scrapie? *Cell* **73**, 1055-1058.
- Jerecic J., Single F., Kruth U., Krestel H., Kolhekar R., Storck T., Kask K., Higuchi M., Sprengel R. und Seburg P.H. (1999) Studies on conditional gene expression in the brain. *Ann. N. Y. Acad. Sci.* **868**, 27-37.
- Jessen K.R. und Mirsky R. (1985) Glial fibrillary acidic polypeptides in peripheral glia. Molecular weight, heterogeneity and distribution. *J. Neuroimmunol.* **8**, 377-393.
- Jessen K.R., Morgan L., Stewart H.J. und Mirsky R. (1990) Three markers of adult non-myelin-forming Schwann cells, 217c(Ran-1), A5E3 and GFAP: development and regulation by neuron-Schwann cell interactions. *Development* **109**, 91-103.
- Jung S., Aliberti J., Graemmel P., Sunshine M.J., Kreutzberg G.W., Sher A. und Littman D.R. (2000) Analysis of fractalkine receptor CX(3)CR1 function by targeted deletion and green fluorescent protein reporter gene insertion. *Mol. Cell Biol.* **20**, 4106-4114.
- Kaltenbach J.P., Kaltenbach M.H. und Lyons W.B. (1958) Nigrosin as a dye for differentiating live and dead ascites cells. *Exp. Cell Res.* **15**, 112-117.
- Kandel E.R., Schwartz J.H. und Jessel T.M. (2000) Principles of neural science. McGraw-Hill,
- Kang J., Jiang L., Goldman S.A. und Nedergaard M. (1998) Astrocyte-mediated potentiation of inhibitory synaptic transmission. *Nat. Neurosci.* **1**, 683-692.

- Kawamoto S., Niwa H., Tashiro F., Sano S., Kondoh G., Takeda J., Tabayashi K. und Miyazaki J. (2000) A novel reporter mouse strain that expresses enhanced green fluorescent protein upon Cre-mediated recombination. *FEBS Lett.* **470**, 263-268.
- Kellendonk C., Tronche F., Monaghan A.P., Angrand P.O., Stewart F. und Schutz G. (1996) Regulation of Cre recombinase activity by the synthetic steroid RU 486. *Nucleic Acids Res.* **24**, 1404-1411.
- Kellendonk C., Tronche F., Casanova E., Anlag K., Opherk C. und Schutz G. (1999) Inducible site-specific recombination in the brain. *J. Mol. Biol.* **285**, 175-182.
- Kimmel R.A., Turnbull D.H., Blanquet V., Wurst W., Loomis C.A. und Joyner A.L. (2000) Two lineage boundaries coordinate vertebrate apical ectodermal ridge formation. *Genes Dev.* **14**, 1377-1389.
- Kirschuk S., Moller T., Voitenko N., Kettenmann H. und Verkhratsky A. (1995) ATP-induced cytoplasmic calcium mobilization in Bergmann glial cells. *J. Neurosci.* **15**, 7861-7871.
- Kirschuk S., Tuschick S., Verkhratsky A. und Kettenmann H. (1996) Calcium signalling in mouse Bergmann glial cells mediated by alpha1-adrenoreceptors and H1 histamine receptors. *Eur. J. Neurosci.* **8**, 1198-1208.
- Kitayama K., Abe M., Kakizaki T., Honma D., Natsume R., Fukaya M., Watanabe M., Miyazaki J., Mishina M. und Sakimura K. (2001) Purkinje cell-specific and inducible gene recombination system generated from C57BL/6 mouse ES cells. *Biochem. Biophys. Res. Commun.* **281**, 1134-1140.
- Kreft M., Stenovec M., Rupnik M., Grilc S., Krzan M., Potokar M., Pangrsic T., Haydon P.G. und Zorec R. (2004) Properties of Ca(2+)-dependent exocytosis in cultured astrocytes. *Glia* **46**, 437-445.
- Laemmli U.K. (1970) Cleavage of structural proteins during the assembly of the head of bacteriophage T4. *Nature* **227**, 680-685.
- Lakso M., Sauer B., Mosinger B., Jr., Lee E.J., Manning R.W., Yu S.H., Mulder K.L. und Westphal H. (1992) Targeted oncogene activation by site-specific recombination in transgenic mice. *Proc. Natl. Acad. Sci. U. S. A* **89**, 6232-6236.
- Lambolez B., Audinat E., Bochet P., Crepel F. und Rossier J. (1992) AMPA receptor subunits expressed by single Purkinje cells. *Neuron* **9**, 247-258.
- Lappe-Siefke C., Goebels S., Gravel M., Nicksch E., Lee J., Braun P.E., Griffiths I.R. und Nave K.A. (2003) Disruption of Cnp1 uncouples oligodendroglial functions in axonal support and myelination. *Nat. Genet.* **33**, 366-374.
- Larkum M.E., Zhu J.J. und Sakmann B. (2001) Dendritic mechanisms underlying the coupling of the dendritic with the axonal action potential initiation zone of adult rat layer 5 pyramidal neurons. *J. Physiol.* **533**, 447-466.
- Leone D.P., Genoud S., Atanasoski S., Grausenburger R., Berger P., Metzger D., Macklin W.B., Chambon P. und Suter U. (2003) Tamoxifen-inducible glia-specific Cre mice for somatic mutagenesis in oligodendrocytes and Schwann cells. *Mol. Cell Neurosci.* **22**, 430-440.
- Lewandoski M. (2001) Conditional control of gene expression in the mouse. *Nat. Rev. Genet.* **2**, 743-755.

- Li M., Indra A.K., Warot X., Brocard J., Messaddeq N., Kato S., Metzger D. und Chambon P. (2000) Skin abnormalities generated by temporally controlled RXRalpha mutations in mouse epidermis. *Nature* **407**, 633-636.
- Lin S.C. und Bergles D.E. (2004) Synaptic signaling between GABAergic interneurons and oligodendrocyte precursor cells in the hippocampus. *Nat. Neurosci.* **7**, 24-32.
- Lin S.C., Huck J.H., Roberts J.D., Macklin W.B., Somogyi P. und Bergles D.E. (2005) Climbing fiber innervation of NG2-expressing glia in the mammalian cerebellum. *Neuron* **46**, 773-785.
- Liou W., Geuze H.J. und Slot J.W. (1996) Improving structural integrity of cryosections for immunogold labeling. *Histochem. Cell Biol.* **106**, 41-58.
- Lobe C.G., Koop K.E., Kreppner W., Lomeli H., Gertsenstein M. und Nagy A. (1999) Z/AP, a double reporter for cre-mediated recombination. *Dev. Biol.* **208**, 281-292.
- Logie C. und Stewart A.F. (1995) Ligand-regulated site-specific recombination. *Proc. Natl. Acad. Sci. U. S. A* **92**, 5940-5944.
- Long J.Z., Lackan C.S. und Hadjantonakis A.K. (2005) Genetic and spectrally distinct in vivo imaging: embryonic stem cells and mice with widespread expression of a monomeric red fluorescent protein. *BMC. Biotechnol.* **5**, 20.
- Lopez T., Lopez-Colome A.M. und Ortega A. (1994) AMPA/KA receptor expression in radial glia. *Neuroreport* **5**, 504-506.
- Lowry O.H., Rosebrough N.J., Farr A.L. und Randall R.J. (1951) Protein measurement with the Folin phenol reagent. *J. Biol. Chem.* **193**, 265-275.
- Lubetzki C., Demerens C., Anglade P., Villarroya H., Frankfurter A., Lee V.M. und Zalc B. (1993) Even in culture, oligodendrocytes myelinate solely axons. *Proc. Natl. Acad. Sci. U. S. A* **90**, 6820-6824.
- Lukyanov K.A., Fradkov A.F., Gurskaya N.G., Matz M.V., Labas Y.A., Savitsky A.P., Markelov M.L., Zaraisky A.G., Zhao X., Fang Y., Tan W. und Lukyanov S.A. (2000) Natural animal coloration can be determined by a nonfluorescent green fluorescent protein homolog. *J. Biol. Chem.* **275**, 25879-25882.
- Mack A., Sauer B., Abremski K. und Hoess R. (1992) Stoichiometry of the Cre recombinase bound to the lox recombining site. *Nucleic Acids Res.* **20**, 4451-4455.
- Magness S.T., Bataller R., Yang L. und Brenner D.A. (2004) A dual reporter gene transgenic mouse demonstrates heterogeneity in hepatic fibrogenic cell populations. *Hepatology* **40**, 1151-1159.
- Malatesta P., Hack M.A., Hartfuss E., Kettenmann H., Klinkert W., Kirchhoff F. und Gotz M. (2003) Neuronal or glial progeny: regional differences in radial glia fate. *Neuron* **37**, 751-764.
- Mallon B.S., Shick H.E., Kidd G.J. und Macklin W.B. (2002) Proteolipid promoter activity distinguishes two populations of NG2-positive cells throughout neonatal cortical development. *J. Neurosci.* **22**, 876-885.
- Mao X., Fujiwara Y., Chapdelaine A., Yang H. und Orkin S.H. (2001) Activation of EGFP expression by Cre-mediated excision in a new ROSA26 reporter mouse strain. *Blood* **97**, 324-326.

- Marino S., Vooijs M., van Der G.H., Jonkers J. und Berns A. (2000) Induction of medulloblastomas in p53-null mutant mice by somatic inactivation of Rb in the external granular layer cells of the cerebellum. *Genes Dev.* **14**, 994-1004.
- Masood K., Besnard F., Su Y. und Brenner M. (1993) Analysis of a segment of the human glial fibrillary acidic protein gene that directs astrocyte-specific transcription. *J. Neurochem.* **61**, 160-166.
- Matsui K., Jahr C.E. und Rubio M.E. (2005) High-concentration rapid transients of glutamate mediate neural-glial communication via ectopic release. *J. Neurosci.* **25**, 7538-7547.
- Matthias K., Kirchhoff F., Seifert G., Huttmann K., Matyash M., Kettenmann H. und Steinhauser C. (2003) Segregated expression of AMPA-type glutamate receptors and glutamate transporters defines distinct astrocyte populations in the mouse hippocampus. *J. Neurosci.* **23**, 1750-1758.
- Matz M.V., Fradkov A.F., Labas Y.A., Savitsky A.P., Zaraisky A.G., Markelov M.L. und Lukyanov S.A. (1999) Fluorescent proteins from nonbioluminescent Anthozoa species. *Nat. Biotechnol.* **17**, 969-973.
- Mauch D.H., Nagler K., Schumacher S., Goritz C., Muller E.C., Otto A. und Pfrieger F.W. (2001) CNS synaptogenesis promoted by glia-derived cholesterol. *Science* **294**, 1354-1357.
- Mayford M., Bach M.E., Huang Y.Y., Wang L., Hawkins R.D. und Kandel E.R. (1996) Control of memory formation through regulated expression of a CaMKII transgene. *Science* **274**, 1678-1683.
- McKnight G.S., Hammer R.E., Kuenzel E.A. und Brinster R.L. (1983) Expression of the chicken transferrin gene in transgenic mice. *Cell* **34**, 335-341.
- Meda L., Baron P. und Scarlato G. (2001) Glial activation in Alzheimer's disease: the role of Abeta and its associated proteins. *Neurobiol. Aging* **22**, 885-893.
- Metzger D., Clifford J., Chiba H. und Chambon P. (1995) Conditional site-specific recombination in mammalian cells using a ligand-dependent chimeric Cre recombinase. *Proc. Natl. Acad. Sci. U. S. A* **92**, 6991-6995.
- Michailov G.V., Sereda M.W., Brinkmann B.G., Fischer T.M., Haug B., Birchmeier C., Role L., Lai C., Schwab M.H. und Nave K.A. (2004) Axonal neuregulin-1 regulates myelin sheath thickness. *Science* **304**, 700-703.
- Miller R.F. (2004) D-Serine as a glial modulator of nerve cells. *Glia* **47**, 275-283.
- Minagar A., Shapshak P., Fujimura R., Ownby R., Heyes M. und Eisdorfer C. (2002) The role of macrophage/microglia and astrocytes in the pathogenesis of three neurologic disorders: HIV-associated dementia, Alzheimer disease, and multiple sclerosis. *J. Neurol. Sci.* **202**, 13-23.
- Minton A.P. (2001) The influence of macromolecular crowding and macromolecular confinement on biochemical reactions in physiological media. *J. Biol. Chem.* **276**, 10577-10580.
- Mothet J.P., Parent A.T., Wolosker H., Brady R.O., Jr., Linden D.J., Ferris C.D., Rogawski M.A. und Snyder S.H. (2000) D-serine is an endogenous ligand for the glycine site of the N-methyl-D-aspartate receptor. *Proc. Natl. Acad. Sci. U. S. A* **97**, 4926-4931.

- Mothet J.P., Pollegioni L., Ouanounou G., Martineau M., Fossier P. und Baux G. (2005) Glutamate receptor activation triggers a calcium-dependent and SNARE protein-dependent release of the gliotransmitter D-serine. Proc. Natl. Acad. Sci. U. S. A **102**, 5606-5611.
- Mullen R.J., Buck C.R. und Smith A.M. (1992) NeuN, a neuronal specific nuclear protein in vertebrates. Development **116**, 201-211.
- Muller T. und Kettenmann H. (1995) Physiology of Bergmann glial cells. Int. Rev. Neurobiol. **38**, 341-359.
- Muller T., Moller T., Berger T., Schnitzer J. und Kettenmann H. (1992) Calcium entry through kainate receptors and resulting potassium-channel blockade in Bergmann glial cells. Science **256**, 1563-1566.
- Muller T., Grosche J., Ohlemeyer C. und Kettenmann H. (1993) NMDA-activated currents in Bergmann glial cells. Neuroreport **4**, 671-674.
- Muller T., Fritschy J.M., Grosche J., Pratt G.D., Mohler H. und Kettenmann H. (1994) Developmental regulation of voltage-gated K<sup>+</sup> channel and GABA<sub>A</sub> receptor expression in Bergmann glial cells. J. Neurosci. **14**, 2503-2514.
- Murai K.K., Nguyen L.N., Irie F., Yamaguchi Y. und Pasquale E.B. (2003) Control of hippocampal dendritic spine morphology through ephrin-A3/EphA4 signaling. Nat. Neurosci. **6**, 153-160.
- Nagy A. und Mar L. (2001) Creation and use of a Cre recombinase transgenic database. Methods Mol. Biol. **158**, 95-106.
- Nauta W.J.H. und Feirtag M. (1990) Die Kleinhirnrinde. In *Neuroanatomie* S. 289-297, Spektrum der Wissenschaft Verlagsgesellschaft, Heidelberg.
- Newman E.A. (2001) Propagation of intercellular calcium waves in retinal astrocytes and Muller cells. J. Neurosci. **21**, 2215-2223.
- Newman E.A. (2003) Glial cell inhibition of neurons by release of ATP. J. Neurosci. **23**, 1659-1666.
- Newman E.A. (2004) Glial modulation of synaptic transmission in the retina. Glia **47**, 268-274.
- Nimmerjahn A., Kirchhoff F. und Helmchen F. (2005) Resting microglial cells are highly dynamic surveillants of brain parenchyma in vivo. Science **308**, 1314-1318.
- Nishizawa Y., Kurihara T., Masuda T. und Takahashi Y. (1985) Immunohistochemical localization of 2',3'-cyclic nucleotide 3'-phosphodiesterase in adult bovine cerebrum and cerebellum. Neurochem. Res. **10**, 1107-1118.
- Niwa H., Yamamura K. und Miyazaki J. (1991) Efficient selection for high-expression transfectants with a novel eukaryotic vector. Gene **108**, 193-199.
- No D., Yao T.P. und Evans R.M. (1996) Ecdysone-inducible gene expression in mammalian cells and transgenic mice. Proc. Natl. Acad. Sci. U. S. A **93**, 3346-3351.
- Nolte C., Matyah M., Pivneva T., Schipke C.G., Ohlemeyer C., Hanisch U.K., Kirchhoff F. und Kettenmann H. (2001) GFAP promoter-controlled EGFP-expressing transgenic mice: a tool to visualize astrocytes and astrogliosis in living brain tissue. Glia **33**, 72-86.

- Norenberg M.D. und Martinez-Hernandez A. (1979) Fine structural localization of glutamine synthetase in astrocytes of rat brain. *Brain Res.* **161**, 303-310.
- Novak A., Guo C., Yang W., Nagy A. und Lobe C.G. (2000) Z/EG, a double reporter mouse line that expresses enhanced green fluorescent protein upon Cre-mediated excision. *Genesis*. **28**, 147-155.
- Okabe M., Ikawa M., Kominami K., Nakanishi T. und Nishimune Y. (1997) 'Green mice' as a source of ubiquitous green cells. *FEBS Lett.* **407**, 313-319.
- Oliet S.H., Piet R. und Poulain D.A. (2001) Control of glutamate clearance and synaptic efficacy by glial coverage of neurons. *Science* **292**, 923-926.
- Opsahl M.L., McClenaghan M., Springbett A., Reid S., Lathe R., Colman A. und Whitelaw C.B. (2002) Multiple effects of genetic background on variegated transgene expression in mice. *Genetics* **160**, 1107-1112.
- Ormo M., Cubitt A.B., Kallio K., Gross L.A., Tsien R.Y. und Remington S.J. (1996) Crystal structure of the *Aequorea victoria* green fluorescent protein. *Science* **273**, 1392-1395.
- Palmiter R.D., Brinster R.L., Hammer R.E., Trumbauer M.E., Rosenfeld M.G., Birnberg N.C. und Evans R.M. (1982) Dramatic growth of mice that develop from eggs microinjected with metallothionein-growth hormone fusion genes. *Nature* **300**, 611-615.
- Pascual O., Casper K.B., Kubera C., Zhang J., Revilla-Sanchez R., Sul J.Y., Takano H., Moss S.J., McCarthy K. und Haydon P.G. (2005) Astrocytic purinergic signaling coordinates synaptic networks. *Science* **310**, 113-116.
- Patterson G., Day R.N. und Piston D. (2001) Fluorescent protein spectra. *J. Cell Sci.* **114**, 837-838.
- Perry A.C., Wakayama T., Kishikawa H., Kasai T., Okabe M., Toyoda Y. und Yanagimachi R. (1999) Mammalian transgenesis by intracytoplasmic sperm injection. *Science* **284**, 1180-1183.
- Poltorak M., Sadoul R., Keilhauer G., Landa C., Fahrig T. und Schachner M. (1987) Myelin-associated glycoprotein, a member of the L2/HNK-1 family of neural cell adhesion molecules, is involved in neuron-oligodendrocyte and oligodendrocyte-oligodendrocyte interaction. *J. Cell Biol.* **105**, 1893-1899.
- Rajewsky K., Gu H., Kuhn R., Betz U.A., Muller W., Roes J. und Schwenk F. (1996) Conditional gene targeting. *J. Clin. Invest.* **98**, 600-603.
- Rickmann M. und Wolff J.R. (1995a) S100 immunoreactivity in a subpopulation of oligodendrocytes and Ranvier's nodes of adult rat brain. *Neurosci. Lett.* **186**, 13-16.
- Rickmann M. und Wolff J.R. (1995b) S100 protein expression in subpopulations of neurons of rat brain. *Neuroscience* **67**, 977-991.
- Ripellino J.A., Neve R.L. und Howe J.R. (1998) Expression and heteromeric interactions of non-N-methyl-D-aspartate glutamate receptor subunits in the developing and adult cerebellum. *Neuroscience* **82**, 485-497.
- Rodriguez I., Feinstein P. und Mombaerts P. (1999) Variable patterns of axonal projections of sensory neurons in the mouse vomeronasal system. *Cell* **97**, 199-208.

- Ross C.A. und Poirier M.A. (2004) Protein aggregation and neurodegenerative disease. *Nat. Med.* **10 Suppl**, S10-S17.
- Roussel G., Delaunoy J.P., Mandel P. und Nussbaum J.L. (1978) Ultrastructural localization study of two Wolfram proteins in rat brain tissue. *J. Neurocytol.* **7**, 155-163.
- Roussel G., Sensenbrenner M., Labourdette G., Wittendorp-Rechenmann E., Pettmann B. und Nussbaum J.L. (1983) An immunohistochemical study of two myelin-specific proteins in enriched oligodendroglial cell cultures combined with an autoradiographic investigation using [<sup>3</sup>H]thymidine. *Brain Res.* **284**, 193-204.
- Rulicke T. und Hubscher U. (2000) Germ line transformation of mammals by pronuclear microinjection. *Exp. Physiol.* **85**, 589-601.
- Safran M., Kim W.Y., Kung A.L., Horner J.W., DePinho R.A. und Kaelin W.G., Jr. (2003) Mouse reporter strain for noninvasive bioluminescent imaging of cells that have undergone Cre-mediated recombination. *Mol. Imaging* **2**, 297-302.
- Sakai T., Johnson K.J., Murozono M., Sakai K., Magnuson M.A., Wieloch T., Cronberg T., Isshiki A., Erickson H.P. und Fassler R. (2001) Plasma fibronectin supports neuronal survival and reduces brain injury following transient focal cerebral ischemia but is not essential for skin-wound healing and hemostasis. *Nat. Med.* **7**, 324-330.
- Salih A., Larkum A., Cox G., Kuhl M. und Hoegh-Guldberg O. (2000) Fluorescent pigments in corals are photoprotective. *Nature* **408**, 850-853.
- Sambrook J., Fritsch I. und Maniatis T. (1989) Molecular cloning. A laboratory manual. CSH Laboratory press,
- Sato Y., Igarashi Y., Hakamata Y., Murakami T., Kaneko T., Takahashi M., Seo N. und Kobayashi E. (2003) Establishment of Alb-DsRed2 transgenic rat for liver regeneration research. *Biochem. Biophys. Res. Commun.* **311**, 478-481.
- Saudou F., Finkbeiner S., Devys D. und Greenberg M.E. (1998) Huntingtin acts in the nucleus to induce apoptosis but death does not correlate with the formation of intranuclear inclusions. *Cell* **95**, 55-66.
- Sauer B. und Henderson N. (1988) Site-specific DNA recombination in mammalian cells by the Cre recombinase of bacteriophage P1. *Proc. Natl. Acad. Sci. U. S. A* **85**, 5166-5170.
- Sauer B. und Henderson N. (1989) Cre-stimulated recombination at loxP-containing DNA sequences placed into the mammalian genome. *Nucleic Acids Res.* **17**, 147-161.
- Schipke C.G., Ohlemeyer C., Matyash M., Nolte C., Kettenmann H. und Kirchhoff F. (2001) Astrocytes of the mouse neocortex express functional N-methyl-D-aspartate receptors. *FASEB J.* **15**, 1270-1272.
- Schwenk F., Kuhn R., Angrand P.O., Rajewsky K. und Stewart A.F. (1998) Temporally and spatially regulated somatic mutagenesis in mice. *Nucleic Acids Res.* **26**, 1427-1432.
- Seibler J., Zevnik B., Kuter-Luks B., Andreas S., Kern H., Hennek T., Rode A., Heimann C., Faust N., Kauselmann G., Schoor M., Jaenisch R., Rajewsky K., Kuhn R. und Schwenk F. (2003) Rapid generation of inducible mouse mutants. *Nucleic Acids Res.* **31**, e12.

- Seri B., Garcia-Verdugo J.M., Collado-Morente L., McEwen B.S. und Alvarez-Buylla A. (2004) Cell types, lineage, and architecture of the germinal zone in the adult dentate gyrus. *J. Comp. Neurol.* **478**, 359-378.
- Shagin D.A., Barsova E.V., Yanushevich Y.G., Fradkov A.F., Lukyanov K.A., Labas Y.A., Semenova T.N., Ugalde J.A., Meyers A., Nunez J.M., Widder E.A., Lukyanov S.A. und Matz M.V. (2004) GFP-like proteins as ubiquitous metazoan superfamily: evolution of functional features and structural complexity. *Mol. Biol. Evol.* **21**, 841-850.
- Shastry B.S. (2003) Neurodegenerative disorders of protein aggregation. *Neurochem. Int.* **43**, 1-7.
- Shimomura O., Johnson F.H. und Saiga Y. (1962) Extraction, purification and properties of aequorin, a bioluminescent protein from the luminous hydromedusan, *Aequorea*. *J. Cell. Comp. Physiol.* **59**, 223-239.
- Shimshek D.R., Kim J., Hubner M.R., Spergel D.J., Buchholz F., Casanova E., Stewart A.F., Seeburg P.H. und Sprengel R. (2002) Codon-improved Cre recombinase (iCre) expression in the mouse. *Genesis* **32**, 19-26.
- Shizuya H., Birren B., Kim U.J., Mancino V., Slepak T., Tachiiri Y. und Simon M. (1992) Cloning and stable maintenance of 300-kilobase-pair fragments of human DNA in *Escherichia coli* using an F-factor-based vector. *Proc. Natl. Acad. Sci. U. S. A* **89**, 8794-8797.
- Soriano P. (1999) Generalized lacZ expression with the ROSA26 Cre reporter strain. *Nat. Genet.* **21**, 70-71.
- Srinivas S., Watanabe T., Lin C.S., William C.M., Tanabe Y., Jessell T.M. und Costantini F. (2001) Cre reporter strains produced by targeted insertion of EYFP and ECFP into the ROSA26 locus. *BMC. Dev. Biol.* **1**, 4.
- St Onge L., Furth P.A. und Gruss P. (1996) Temporal control of the Cre recombinase in transgenic mice by a tetracycline responsive promoter. *Nucleic Acids Res.* **24**, 3875-3877.
- Stegmuller J., Schneider S., Hellwig A., Garwood J. und Trotter J. (2002) AN2, the mouse homologue of NG2, is a surface antigen on glial precursor cells implicated in control of cell migration. *J. Neurocytol.* **31**, 497-505.
- Sternberg N. und Hamilton D. (1981) Bacteriophage P1 site-specific recombination. I. Recombination between loxP sites. *J. Mol. Biol.* **150**, 467-486.
- Sultan F. und Heck D. (2003) Detection of sequences in the cerebellar cortex: numerical estimate of the possible number of tidal-wave inducing sequences represented. *J. Physiol. Paris* **97**, 591-600.
- Takano T., Tian G.F., Peng W., Lou N., Libionka W., Han X. und Nedergaard M. (2006) Astrocyte-mediated control of cerebral blood flow. *Nat. Neurosci.* **9**, 260-267.
- Taylor J.P., Hardy J. und Fischbeck K.H. (2002) Toxic proteins in neurodegenerative disease. *Science* **296**, 1991-1995.
- Theis M., Mas C., Doring B., Kruger O., Herrera P., Meda P. und Willecke K. (2001) General and conditional replacement of connexin43-coding DNA by a lacZ reporter gene for cell-autonomous analysis of expression. *Cell Commun. Adhes.* **8**, 383-386.

- Thomas K.R. und Capecchi M.R. (1987) Site-directed mutagenesis by gene targeting in mouse embryo-derived stem cells. *Cell* **51**, 503-512.
- Thorey I.S., Muth K., Russ A.P., Otte J., Reffelmann A. und von Melchner H. (1998) Selective disruption of genes transiently induced in differentiating mouse embryonic stem cells by using gene trap mutagenesis and site-specific recombination. *Mol. Cell. Biol.* **18**, 3081-3088.
- Tolwani R.J., Buckmaster P.S., Varma S., Cosgaya J.M., Wu Y., Suri C. und Shooter E.M. (2002) BDNF overexpression increases dendrite complexity in hippocampal dentate gyrus. *Neuroscience* **114**, 795-805.
- Towbin H., Staehelin T. und Gordon J. (1979) Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: procedure and some applications. *Proc. Natl. Acad. Sci. U. S. A* **76**, 4350-4354.
- Tsien R.Y. (1998) The green fluorescent protein. *Annu. Rev. Biochem.* **67**, 509-544.
- Tsien J.Z., Chen D.F., Gerber D., Tom C., Mercer E.H., Anderson D.J., Mayford M., Kandel E.R. und Tonegawa S. (1996) Subregion- and cell type-restricted gene knockout in mouse brain. *Cell* **87**, 1317-1326.
- Tsujita M., Mori H., Watanabe M., Suzuki M., Miyazaki J. und Mishina M. (1999) Cerebellar granule cell-specific and inducible expression of Cre recombinase in the mouse. *J. Neurosci.* **19**, 10318-10323.
- Van Duyne G.D. (2001) A structural view of Cre-loxP site-specific recombination. *Ann. Rev. Biophys. Biomol. Struc.* **30**, 87-104.
- Verkhratsky A. und Steinhauser C. (2000) Ion channels in glial cells. *Brain Res. Brain Res. Rev.* **32**, 380-412.
- Verkhusha V.V. und Lukyanov K.A. (2004) The molecular properties and applications of Anthozoa fluorescent proteins and chromoproteins. *Nat. Biotechnol.* **22**, 289-296.
- Verkhusha V.V., Otsuna H., Awasaki T., Oda H., Tsukita S. und Ito K. (2001) An enhanced mutant of red fluorescent protein DsRed for double labeling and developmental timer of neural fiber bundle formation. *J. Biol. Chem.* **276**, 29621-29624.
- Vetcher A.A., Lushnikov A.Y., Navarra-Madsen J., Scharein R.G., Lyubchenko Y.L., Darcy I.K. und Levene S.D. (2006) DNA Topology and Geometry in Flp and Cre Recombination. *J. Mol. Biol.*
- Vintersten K., Monetti C., Gertsenstein M., Zhang P., Laszlo L., Biechele S. und Nagy A. (2004) Mouse in red: red fluorescent protein expression in mouse ES cells, embryos, and adult animals. *Genesis* **40**, 241-246.
- Vives V., Alonso G., Solal A.C., Joubert D. und Legraverend C. (2003) Visualization of S100B-positive neurons and glia in the central nervous system of EGFP transgenic mice. *J. Comp. Neurol.* **457**, 404-419.
- Vogelstein B. und Gillespie D. (1979) Preparative and analytical purification of DNA from agarose. *Proc. Natl. Acad. Sci. U. S. A* **76**, 615-619.
- Vooijs M., Jonkers J. und Berns A. (2001) A highly efficient ligand-regulated Cre recombinase mouse line shows that LoxP recombination is position dependent. *EMBO Rep.* **2**, 292-297.

Wachter R.M. (2005) Symposium-in-print: The Family of GFP-Like Proteins: Structure, Function, Photophysics and Biosensor Applications. *Photochem. Photobiol.*

Wallraff A., Odermatt B., Willecke K. und Steinhauser C. (2004) Distinct types of astroglial cells in the hippocampus differ in gap junction coupling. *Glia* **48**, 36-43.

Walz W. (2000) Role of astrocytes in the clearance of excess extracellular potassium. *Neurochem. Int.* **36**, 291-300.

Wang Y., Schnegelsberg P.N., Dausman J. und Jaenisch R. (1996) Functional redundancy of the muscle-specific transcription factors Myf5 and myogenin. *Nature* **379**, 823-825.

Waterston R.H., Lindblad-Toh K., Birney E., Rogers J., Abril J.F., Agarwala R., Ainscough R., Andersson M., An P., Antonarakis S.E., Attwood J., Baertsch R., Bailey J., Barlow K., Beck S., Berry E., Birren B., Bloom T., Bork P., Botcherby M., Bray N., Brent M.R., Brown D.G., Brown S.D., Bult C., Burton J., Butler J., Campbell R.D., Carninci P., Cawley S., Chiaromonte F., Chinwalla A.T., Church D.M., Clamp M., Clee C., Collins F.S., Cook L.L., Copley R.R., Coulson A., Couronne O., Cuff J., Curwen V., Cutts T., Daly M., David R., Davies J., Delehaunty K.D., Deri J., Dermitzakis E.T., Dewey C., Dickens N.J., Diekhans M., Dodge S., Dubchak I., Dunn D.M., Eddy S.R., Elnitski L., Emes R.D., Eswara P., Eyras E., Felsenfeld A., Fewell G.A., Flicek P., Foley K., Frankel W.N., Fulton L.A., Fulton R.S., Furey T.S., Gage D., Gibbs R.A., Glusman G., Gnerre S., Goldman N., Goodstadt L., Grafham D., Graves T.A., Green E.D., Gregory S., Guigo R., Guyer M., Hardison R.C., Haussler D., Hayashizaki Y., Hillier L.W., Hinrichs A., Hlavina W., Holzer T., Hsu F., Hua A., Hubbard T., Hunt A., Jackson I., Jaffe D.B., Johnson L.S., Jones M., Jones T.A., Joy A., Kamal M., Karlsson E.K., Karolchik D., Kasprzyk A., Kawai J., Keibler E., Kells C., Kent W.J., Kirby A., Kolbe D.L., Korf I., Kucherlapati R.S., Kulbokas E.J., Kulp D., Landers T., Leger J.P., Leonard S., Letunic I., Levine R., Li J., Li M., Lloyd C., Lucas S., Ma B., Maglott D.R., Mardis E.R., Matthews L., Mauceli E., Mayer J.H., McCarthy M., McCombie W.R., McLaren S., McLay K., McPherson J.D., Meldrim J., Meredith B., Mesirov J.P., Miller W., Miner T.L., Mongin E., Montgomery K.T., Morgan M., Mott R., Mullikin J.C., Muzny D.M., Nash W.E., Nelson J.O., Nhan M.N., Nicol R., Ning Z., Nusbaum C., O'Connor M.J., Okazaki Y., Oliver K., Overton-Larty E., Pachter L., Parra G., Pepin K.H., Peterson J., Pevzner P., Plumb R., Pohl C.S., Poliakov A., Ponce T.C., Ponting C.P., Potter S., Quail M., Reymond A., Roe B.A., Roskin K.M., Rubin E.M., Rust A.G., Santos R., Sapochnikov V., Schultz B., Schultz J., Schwartz M.S., Schwartz S., Scott C., Seaman S., Searle S., Sharpe T., Sheridan A., Shownkeen R., Sims S., Singer J.B., Slater G., Smit A., Smith D.R., Spencer B., Stabenau A., Stange-Thomann N., Sugnet C., Suyama M., Tesler G., Thompson J., Torrents D., Trevaskis E., Tromp J., Ucla C., Ureta-Vidal A., Vinson J.P., Von Niederhausern A.C., Wade C.M., Wall M., Weber R.J., Weiss R.B., Wendl M.C., West A.P., Wetterstrand K., Wheeler R., Whelan S., Wierzbowski J., Willey D., Williams S., Wilson R.K., Winter E., Worley K.C., Wyman D., Yang S., Yang S.P., Zdobnov E.M., Zody M.C. und Lander E.S. (2002) Initial sequencing and comparative analysis of the mouse genome. *Nature* **420**, 520-562.

Wenck A., Pugieux C., Turner M., Dunn M., Stacy C., Tiozzo A., Dunder E., van Grinsven E., Khan R., Sigareva M., Wang W.C., Reed J., Drayton P., Oliver D., Trafford H., Legris G., Rushton H., Tayab S., Launis K., Chang Y.F., Chen D.F. und Melchers L. (2003) Reef-coral proteins as visual, non-destructive reporters for plant transformation. *Plant Cell Rep.* **22**, 244-251.

Wiehler J., von Hummel J. und Steipe B. (2001) Mutants of Discosoma red fluorescent protein with a GFP-like chromophore. *FEBS Lett.* **487**, 384-389.

- Wight P.A., Duchala C.S., Readhead C. und Macklin W.B. (1993) A myelin proteolipid protein-LacZ fusion protein is developmentally regulated and targeted to the myelin membrane in transgenic mice. *J. Cell Biol.* **123**, 443-454.
- Wolosker H., Blackshaw S. und Snyder S.H. (1999) Serine racemase: a glial enzyme synthesizing D-serine to regulate glutamate-N-methyl-D-aspartate neurotransmission. *Proc. Natl. Acad. Sci. U. S. A* **96**, 13409-13414.
- Yang F., Moss L.G. und Phillips G.N., Jr. (1996) The molecular structure of green fluorescent protein. *Nat. Biotechnol.* **14**, 1246-1251.
- Yarbrough D., Wachter R.M., Kallio K., Matz M.V. und Remington S.J. (2001) Refined crystal structure of DsRed, a red fluorescent protein from coral, at 2.0-A resolution. *Proc. Natl. Acad. Sci. U. S. A* **98**, 462-467.
- Zagranichny V.E., Rudenko N.V., Gorokhovatsky A.Y., Zakharov M.V., Balashova T.A. und Arseniev A.S. (2004) Traditional GFP-type cyclization and unexpected fragmentation site in a purple chromoprotein from *Anemonia sulcata*, asFP595. *Biochemistry* **43**, 13598-13603.
- Zeilhofer H.U., Studler B., Arabadzisz D., Schweizer C., Ahmadi S., Layh B., Bosl M.R. und Fritschy J.M. (2005) Glycinergic neurons expressing enhanced green fluorescent protein in bacterial artificial chromosome transgenic mice. *J. Comp. Neurol.* **482**, 123-141.
- Zhang Q. und Haydon P.G. (2005) Roles for gliotransmission in the nervous system. *J. Neural Transm.* **112**, 121-125.
- Zhang G., Gurtu V. und Kain S.R. (1996) An enhanced green fluorescent protein allows sensitive detection of gene transfer in mammalian cells. *Biochem. Biophys. Res. Commun.* **227**, 707-711.
- Zhang D.Q., Stone J.F., Zhou T., Ohta H. und McMahon D.G. (2004a) Characterization of genetically labeled catecholamine neurons in the mouse retina. *Neuroreport* **15**, 1761-1765.
- Zhang Q., Pangrsic T., Kreft M., Krzan M., Li N., Sul J.Y., Halassa M., Van Bockstaele E., Zorec R. und Haydon P.G. (2004b) Fusion-related release of glutamate from astrocytes. *J. Biol. Chem.* **279**, 12724-12733.
- Zhu H. und Zon L.I. (2004) Use of the DsRed fluorescent reporter in zebrafish. *Methods Cell Biol.* **76**, 3-12.
- Zhu H., Wang G., Li G., Han M., Xu T., Zhuang Y. und Wu X. (2005) Ubiquitous expression of mRFP1 in transgenic mice. *Genesis* **42**, 86-90.
- Zhuo L., Theis M., Alvarez-Maya I., Brenner M., Willecke K. und Messing A. (2001) hGFAP-cre transgenic mice for manipulation of glial and neuronal function in vivo. *Genesis* **31**, 85-94.
- Zirlinger M., Lo L., McMahon J., McMahon A.P. und 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.
- Zonta M., Angulo M.C., Gobbo S., Rosengarten B., Hossmann K.A., Pozzan T. und Carmignoto G. (2003) Neuron-to-astrocyte signaling is central to the dynamic control of brain microcirculation. *Nat. Neurosci.* **6**, 43-50.