

## 6. Literaturverzeichnis

- Allen, R.E., Sheehan, S.M., Taylor, R.G., Kendall, T.L., Rice, G.M.** (1995) Hepatocyte growth factor activates quiescent skeletal muscle satellite cells in vitro. *J Cell Physiol*, **165**, 307-12.
- Amthor, H., Christ, B., Weil, M., Patel, K.** (1998) The importance of timing differentiation during limb muscle development. *Curr Biol*, **8**, 642-52.
- Amthor, H., Christ, B., Patel, K.** (1999) A molecular mechanism enabling continuous embryonic muscle growth - a balance between proliferation and differentiation. *Development*, **126**, 1041-53.
- Anastasi, S., Giordano, S., Sthandier, O., Gambarotta, G., Maione, R., Comoglio, P., Amati, P.** (1997) A natural hepatocyte growth factor/scatter factor autocrine loop in myoblast cells and the effect of the constitutive Met kinase activation on myogenic differentiation. *J Cell Biol*, **137**, 1057-68.
- Arber, S., Han, B., Mendelsohn, M., Smith, M., Jessell, T.M., Sockanathan, S.** (1999) Requirement for the homeobox gene Hb9 in the consolidation of motor neuron identity. *Neuron*, **23**, 659-74.
- Artelt, P., Grannemann, R., Stocking, C., Friel, J., Bartsch, J., Hauser, H.** (1991) The prokaryotic neomycin-resistance-encoding gene acts as a transcriptional silencer in eukaryotic cells. *Gene*, **99**, 249-54.
- Bardelli, A., Longati, P., Gramaglia, D., Stella, M.C., Comoglio, P.M.** (1997) Gab1 coupling to the HGF/Met receptor multifunctional docking site requires binding of Grb2 and correlates with the transforming potential. *Oncogene*, **15**, 3103-11.
- Berger, S.L., Kimmel, A.R.** (1987) *Guide To Molecular Cloning Techniques*. Academic Press, San Diego, CA 92101-4495, USA.
- Birmingham, N.A., Hassan, B.A., Wang, V.Y., Fernandez, M., Banfi, S., Bellen, H.J., Fritzsch, B., Zoghbi, H.Y.** (2001) Proprioceptor pathway development is dependent on Math1. *Neuron*, **30**, 411-22.
- Birchmeier, C., Brohmann, H.** (2000) Genes that control the development of migrating muscle precursor cells. *Curr Opin Cell Biol*, **12**, 725-30.
- Birnboim, H.C., Doly, J.** (1979) A rapid alkaline extraction procedure for screening recombinant plasmid DNA. *Nucleic Acids Res*, **7**, 1513-23.
- Bladt, F., Riethmacher, D., Isenmann, S., Aguzzi, A., Birchmeier, C.** (1995) Essential role for the c-met receptor in the migration of myogenic precursor cells into the limb bud. *Nature*, **376**, 768-71.
- Bober, E., Lyons, G.E., Braun, T., Cossu, G., Buckingham, M., Arnold, H.H.** (1991) The muscle regulatory gene, Myf-6, has a biphasic pattern of expression during early mouse development. *J Cell Biol*, **113**, 1255-65.
- Bober, E., Franz, T., Arnold, H.H., Gruss, P., Tremblay, P.** (1994) Pax-3 is required for the development of limb muscles: a possible role for the migration of dermomyotomal muscle progenitor cells. *Development*, **120**, 603-12.
- Borycki, A.G., Li, J., Jin, F., Emerson, C.P., Epstein, J.A.** (1999) Pax3 functions in cell survival and in pax7 regulation. *Development*, **126**, 1665-74.
- Bottaro, D.P., Rubin, J.S., Faletto, D.L., Chan, A.M., Kmiecik, T.E., Vande Woude, G.F., Aaronson, S.A.** (1991) Identification of the hepatocyte growth factor receptor as the c-met proto-oncogene product. *Science*, **251**, 802-4.
- Bradley, A., Robertson, E.** (1986) Embryo-derived stem cells: a tool for elucidating the developmental genetics of the mouse. *Curr Top Dev Biol*, **20**, 357-71.

- Brand-Saberi, B., Krenn, V., Grim, M., Christ, B.** (1993) Differences in the fibronectin-dependence of migrating cell populations. *Anat Embryol (Berl)*, **187**, 17-26.
- Brand-Saberi, B., Gamel, A.J., Krenn, V., Müller, T.S., Wilting, J., Christ, B.** (1996a) N-cadherin is involved in myoblast migration and muscle differentiation in the avian limb bud. *Dev Biol*, **178**, 160-73.
- Brand-Saberi, B., Müller, T.S., Wilting, J., Christ, B., Birchmeier, C.** (1996b) Scatter factor/hepatocyte growth factor (SF/HGF) induces emigration of myogenic cells at interlimb level in vivo. *Dev Biol*, **179**, 303-8.
- Braun, T., Buschhausen-Denker, G., Bober, E., Tannich, E., Arnold, H.H.** (1989a) A novel human muscle factor related to but distinct from MyoD1 induces myogenic conversion in 10T1/2 fibroblasts. *Embo J*, **8**, 701-9.
- Braun, T., Bober, E., Buschhausen-Denker, G., Kohtz, S., Grzeschik, K.H., Arnold, H.H., Kotz, S.** (1989b) Differential expression of myogenic determination genes in muscle cells: possible autoactivation by the Myf gene products. *Embo J*, **8**, 3617-25.
- Braun, T., Rudnicki, M.A., Arnold, H.H., Jaenisch, R.** (1992) Targeted inactivation of the muscle regulatory gene Myf-5 results in abnormal rib development and perinatal death. *Cell*, **71**, 369-82.
- Braun, T., Arnold, H.H.** (1995) Inactivation of Myf-6 and Myf-5 genes in mice leads to alterations in skeletal muscle development. *Embo J*, **14**, 1176-86.
- Briscoe, J., Sussel, L., Serup, P., Hartigan-O'Connor, D., Jessell, T.M., Rubenstein, J.L., Ericson, J.** (1999) Homeobox gene Nkx2.2 and specification of neuronal identity by graded Sonic hedgehog signalling. *Nature*, **398**, 622-7.
- Briscoe, J., Pierani, A., Jessell, T.M., Ericson, J.** (2000) A homeodomain protein code specifies progenitor cell identity and neuronal fate in the ventral neural tube. *Cell*, **101**, 435-45.
- Briscoe, J., Ericson, J.** (2001) Specification of neuronal fates in the ventral neural tube. *Curr Opin Neurobiol*, **11**, 43-9.
- Brohmann, H., Jagla, K., Birchmeier, C.** (2000) The role of Lbx1 in migration of muscle precursor cells. *Development*, **127**, 437-45.
- Caton, A., Hacker, A., Naeem, A., Livet, J., Maina, F., Bladt, F., Klein, R., Birchmeier, C., Guthrie, S.** (2000) The branchial arches and HGF are growth-promoting and chemoattractant for cranial motor axons. *Development*, **127**, 1751-66.
- Chen, F., Liu, K.C., Epstein, J.A.** (1999) Lbx2, a novel murine homeobox gene related to the Drosophila ladybird genes is expressed in the developing urogenital system, eye and brain. *Mech Dev*, **84**, 181-4.
- Chen, Z.F., Rebelo, S., White, F., Malmberg, A.B., Baba, H., Lima, D., Woolf, C.J., Basbaum, A.I., Anderson, D.J.** (2001) The paired homeodomain protein DRG11 is required for the projection of cutaneous sensory afferent fibers to the dorsal spinal cord. *Neuron*, **31**, 59-73.
- Cheng, T.C., Wallace, M.C., Merlie, J.P., Olson, E.N.** (1993) Separable regulatory elements governing myogenin transcription in mouse embryogenesis. *Science*, **261**, 215-18.
- Choi, J., Costa, M.L., Mermelstein, C.S., Chagas, C., Holtzer, S., Holtzer, H.** (1990) MyoD converts primary dermal fibroblasts, chondroblasts, smooth muscle, and retinal pigmented epithelial cells into striated mononucleated myoblasts and multinucleated myotubes. *Proc Natl Acad Sci U S A*, **87**, 7988-92.
- Christ, B., Jacob, H.J., Jacob, M.** (1977) Experimental analysis of the origin of the wing musculature in avian embryos. *Anat Embryol (Berl)*, **150**, 171-86.
- Christ, B., Jacob, M., Jacob, H.J.** (1983) On the origin and development of the ventrolateral abdominal muscles in the avian embryo. An experimental and ultrastructural study. *Anat Embryol (Berl)*, **166**, 87-101.

- Christ, B., Ordahl, C.P.** (1995) Early stages of chick somite development. *Anat Embryol (Berl)*, **191**, 381-96.
- Clark, G.** (1981) *Staining Procedures*. Williams & Wilkins, Baltimore, MD 21202, USA.
- Cohn, M.J., Izpisua-Belmonte, J.C., Abud, H., Heath, J.K., Tickle, C.** (1995) Fibroblast growth factors induce additional limb development from the flank of chick embryos. *Cell*, **80**, 739-46.
- Colamarino, S.A., Tessier-Lavigne, M.** (1995) The axonal chemoattractant netrin-1 is also a chemorepellent for trochlear motor axons. *Cell*, **81**, 621-9.
- Cornelison, D.D., Wold, B.J.** (1997) Single-cell analysis of regulatory gene expression in quiescent and activated mouse skeletal muscle satellite cells. *Dev Biol*, **191**, 270-83.
- Crossley, P.H., Minowada, G., MacArthur, C.A., Martin, G.R.** (1996) Roles for FGF8 in the induction, initiation, and maintenance of chick limb development. *Cell*, **84**, 127-36.
- Daston, G., Lamar, E., Olivier, M., Goulding, M.** (1996) Pax-3 is necessary for migration but not differentiation of limb muscle precursors in the mouse. *Development*, **122**, 1017-27.
- Davis, R.L., Weintraub, H., Lassar, A.B.** (1987) Expression of a single transfected cDNA converts fibroblasts to myoblasts. *Cell*, **51**, 987-1000.
- Denetclaw, W.F., Jr., Christ, B., Ordahl, C.P.** (1997) Location and growth of epaxial myotome precursor cells. *Development*, **124**, 1601-10.
- Denhardt, D.T.** (1966) A membrane-filter technique for the detection of complementary DNA. *Biochem Biophys Res Commun*, **23**, 641-6.
- Dickinson, M.E., Selleck, M.A., McMahon, A.P., Bronner-Fraser, M.** (1995) Dorsalization of the neural tube by the non-neural ectoderm. *Development*, **121**, 2099-106.
- Dietrich, S., Schubert, F.R., Healy, C., Sharpe, P.T., Lumsden, A.** (1998) Specification of the hypaxial musculature. *Development*, **125**, 2235-49.
- Dietrich, S., Abou-Rebyeh, F., Brohmann, H., Bladt, F., Sonnenberg-Riethmacher, E., Yamaai, T., Lumsden, A., Brand-Saberi, B., Birchmeier, C.** (1999) The role of SF/HGF and c-Met in the development of skeletal muscle. *Development*, **126**, 1621-9.
- Ebens, A., Brose, K., Leonardo, E.D., Hanson, M.G., Jr., Bladt, F., Birchmeier, C., Barres, B.A., Tessier-Lavigne, M.** (1996) Hepatocyte growth factor/scatter factor is an axonal chemoattractant and a neurotrophic factor for spinal motor neurons. *Neuron*, **17**, 1157-72.
- Edmondson, D.G., Olson, E.N.** (1989) A gene with homology to the myc similarity region of MyoD1 is expressed during myogenesis and is sufficient to activate the muscle differentiation program. *Genes Dev*, **3**, 628-40.
- Epstein, D.J., Vekemans, M., Gros, P.** (1991) Splotch (Sp2H), a mutation affecting development of the mouse neural tube, shows a deletion within the paired homeodomain of Pax-3. *Cell*, **67**, 767-74.
- Epstein, J.A., Shapiro, D.N., Cheng, J., Lam, P.Y., Maas, R.L.** (1996) Pax3 modulates expression of the c-Met receptor during limb muscle development. *Proc Natl Acad Sci U S A*, **93**, 4213-8.
- Ericson, J., Muhr, J., Placzek, M., Lints, T., Jessell, T.M., Edlund, T.** (1995) Sonic hedgehog induces the differentiation of ventral forebrain neurons: a common signal for ventral patterning within the neural tube. *Cell*, **81**, 747-56.
- Ericson, J., Morton, S., Kawakami, A., Roelink, H., Jessell, T.M.** (1996) Two critical periods of Sonic Hedgehog signaling required for the specification of motor neuron identity. *Cell*, **87**, 661-73.

- Fan, C.M., Kuwana, E., Bulfone, A., Fletcher, C.F., Copeland, N.G., Jenkins, N.A., Crews, S., Martinez, S., Puelles, L., Rubenstein, J.L., Tessier-Lavigne, M.** (1996) Expression patterns of two murine homologs of *Drosophila* single-minded suggest possible roles in embryonic patterning and in the pathogenesis of Down syndrome. *Mol Cell Neurosci*, **7**, 1-16.
- Feinberg, A.P., Vogelstein, B.** (1983) A technique for radiolabeling DNA restriction endonuclease fragments to high specific activity. *Anal Biochem*, **132**, 6-13.
- Fiering, S., Epner, E., Robinson, K., Zhuang, Y., Telling, A., Hu, M., Martin, D.I., Enver, T., Ley, T.J., Groudine, M.** (1995) Targeted deletion of 5'HS2 of the murine beta-globin LCR reveals that it is not essential for proper regulation of the beta-globin locus. *Genes Dev*, **9**, 2203-13.
- Fixman, E.D., Holgado-Madruga, M., Nguyen, L., Kamikura, D.M., Fournier, T.M., Wong, A.J., Park, M.** (1997) Efficient cellular transformation by the Met oncoprotein requires a functional Grb2 binding site and correlates with phosphorylation of the Grb2-associated proteins, Cbl and Gab1. *J Biol Chem*, **272**, 20167-72.
- Franz, T., Kothary, R., Surani, M.A., Halata, Z., Grim, M.** (1993) The Splotch mutation interferes with muscle development in the limbs. *Anat Embryol (Berl)*, **187**, 153-60.
- Frisén, J., Yates, P.A., McLaughlin, T., Friedman, G.C., O'Leary, D.D., Barbacid, M.** (1998) Ephrin-A5 (AL-1/RAGS) is essential for proper retinal axon guidance and topographic mapping in the mammalian visual system. *Neuron*, **20**, 235-43.
- Gal-Levi, R., Leshem, Y., Aoki, S., Nakamura, T., Halevy, O.** (1998) Hepatocyte growth factor plays a dual role in regulating skeletal muscle satellite cell proliferation and differentiation. *Biochim Biophys Acta*, **1402**, 39-51.
- Galis, F.** (2001) Evolutionary history of vertebrate appendicular muscle. *Bioessays*, **23**, 383-7.
- Gao, P.P., Yue, Y., Zhang, J.H., Cerretti, D.P., Levitt, P., Zhou, R.** (1998) Regulation of thalamic neurite outgrowth by the Eph ligand ephrin-A5: implications in the development of thalamocortical projections. *Proc Natl Acad Sci U S A*, **95**, 5329-34.
- Gavrieli, Y., Sherman, Y., Ben-Sasson, S.A.** (1992) Identification of programmed cell death in situ via specific labeling of nuclear DNA fragmentation. *J Cell Biol*, **119**, 493-501.
- Gherardi, E., Gray, J., Stoker, M., Perryman, M., Furlong, R.** (1989) Purification of scatter factor, a fibroblast-derived basic protein that modulates epithelial interactions and movement. *Proc Natl Acad Sci U S A*, **86**, 5844-8.
- Gillespie, P.G., Walker, R.G.** (2001) Molecular basis of mechanosensory transduction. *Nature*, **413**, 194-202.
- Goulding, M.D., Chalepakis, G., Deutsch, U., Erselius, J.R., Gruss, P.** (1991) Pax-3, a novel murine DNA binding protein expressed during early neurogenesis. *Embo J*, **10**, 1135-47.
- Goulding, M., Lumsden, A., Paquette, A.J.** (1994) Regulation of Pax-3 expression in the dermomyotome and its role in muscle development. *Development*, **120**, 957-71.
- Gowan, K., Helms, A.W., Hunsaker, T.L., Collisson, T., Ebert, P.J., Odom, R., Johnson, J.E.** (2001) Crossinhibitory activities of Ngn1 and Math1 allow specification of distinct dorsal interneurons. *Neuron*, **31**, 219-32.
- Grim, M.** (1970) Differentiation of myoblasts and the relationship between somites and the wing bud of the chick embryo. *Z. Anat. Entwicklungsgesch.*, **132**, 260-71.
- Hamer, D.H., Leder, P.** (1979) Splicing and the formation of stable RNA. *Cell*, **18**, 1299-302.

- Hannon, K., Kudla, A.J., McAvoy, M.J., Clase, K.L., Olwin, B.B.** (1996) Differentially expressed fibroblast growth factors regulate skeletal muscle development through autocrine and paracrine mechanisms. *J Cell Biol*, **132**, 1151-9.
- Hasty, P., Bradley, A., Morris, J.H., Edmondson, D.G., Venuti, J.M., Olson, E.N., Klein, W.H.** (1993) Muscle deficiency and neonatal death in mice with a targeted mutation in the myogenin gene. *Nature*, **364**, 501-6.
- Heanue, T.A., Reshef, R., Davis, R.J., Mardon, G., Oliver, G., Tomarev, S., Lassar, A.B., Tabin, C.J.** (1999) Synergistic regulation of vertebrate muscle development by Dach2, Eya2, and Six1, homologs of genes required for *Drosophila* eye formation. *Genes Dev*, **13**, 3231-43.
- Hedgecock, E.M., Culotti, J.G., Hall, D.H.** (1990) The unc-5, unc-6, and unc-40 genes guide circumferential migrations of pioneer axons and mesodermal cells on the epidermis in *C. elegans*. *Neuron*, **4**, 61-85.
- Helms, A.W., Johnson, J.E.** (1998) Progenitors of dorsal commissural interneurons are defined by MATH1 expression. *Development*, **125**, 919-28.
- Heymann, S., Koudrova, M., Arnold, H.H., Köster, M., Braun, T.** (1996) Regulation and function of SF/HGF during migration of limb muscle precursor cells in chicken. *Dev Biol*, **180**, 566-78.
- Hinterberger, T.J., Sasoon, D.A., Rhodes, S.J., Konieczny, S.F.** (1991) Expression of the muscle regulatory factor MRF4 during somite and skeletal myofiber development. *Dev Biol*, **147**, 144-56.
- Hogan, B., Beddington, R., Constantini, F., Lacy, E.** (1994) *Manipulating The Mouse Embryo - A Laboratory Manual*. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York 11803-2500, USA.
- Hug, B.A., Wesselschmidt, R.L., Fiering, S., Bender, M.A., Epner, E., Groudine, M., Ley, T.J.** (1996) Analysis of mice containing a targeted deletion of beta-globin locus control region 5' hypersensitive site 3. *Mol Cell Biol*, **16**, 2906-12.
- Ikeya, M., Lee, S.M., Johnson, J.E., McMahon, A.P., Takada, S.** (1997) Wnt signalling required for expansion of neural crest and CNS progenitors. *Nature*, **389**, 966-70.
- Ingham, R.J., Holgado-Madruga, M., Siu, C., Wong, A.J., Gold, M.R.** (1998) The Gab1 protein is a docking site for multiple proteins involved in signaling by the B cell antigen receptor. *J Biol Chem*, **273**, 30630-7.
- Innis, M.A., Gelfand, D.H., Sninsky, J.J.** (1989) *PCR Protocols: A Guide To Methods And Applications*. Academic Press, San Diego, CA 92101-4495, USA.
- Inoue, H., Nojima, H., Okayama, H.** (1990) High efficiency transformation of *Escherichia coli* with plasmids. *Gene*, **96**, 23-8.
- Itoh, N., Mima, T., Mikawa, T.** (1996) Loss of fibroblast growth factor receptors is necessary for terminal differentiation of embryonic limb muscle. *Development*, **122**, 291-300.
- Jacob, M., Christ, B., Jacob, H.J.** (1978) On the migration of myogenic stem cells into the prospective wing region of chick embryos. A scanning and transmission electron microscope study. *Anat Embryol (Berl)*, **153**, 179-93.
- Jacob, M., Christ, B., Jacob, H.J.** (1979) The migration of myogenic cells from the somites into the leg region of avian embryos. An ultrastructural study. *Anat Embryol (Berl)*, **157**, 291-309.
- Jagla, K., Stanceva, I., Dretzen, G., Bellard, F., Bellard, M.** (1994) A distinct class of homeodomain proteins is encoded by two sequentially expressed *Drosophila* genes from the 93D/E cluster. *Nucleic Acids Res*, **22**, 1202-7.
- Jagla, K., Dolle, P., Mattei, M.G., Jagla, T., Schuhbaur, B., Dretzen, G., Bellard, F., Bellard, M.** (1995) Mouse Lbx1 and human LBX1 define a novel mammalian homeobox gene family related to the *Drosophila* lady bird genes. *Mech Dev*, **53**, 345-56.

- Jagla, K., Jagla, T., Heitzler, P., Dretzen, G., Bellard, F., Bellard, M.** (1997a) ladybird, a tandem of homeobox genes that maintain late wingless expression in terminal and dorsal epidermis of the *Drosophila* embryo. *Development*, **124**, 91-100.
- Jagla, K., Frasch, M., Jagla, T., Dretzen, G., Bellard, F., Bellard, M.** (1997b) ladybird, a new component of the cardiogenic pathway in *Drosophila* required for diversification of heart precursors. *Development*, **124**, 3471-9.
- Jagla, T., Bellard, F., Lutz, Y., Dretzen, G., Bellard, M., Jagla, K.** (1998) ladybird determines cell fate decisions during diversification of *Drosophila* somatic muscles. *Development*, **125**, 3699-708.
- Jerpseth, B., Greener, A., Short, J.M., Viola, J., Kretz, P.** (1992) XL1-Blue MRF' E. coli cells: McrA-, McrCB-, McrF-, Mrr-, HsdR- derivative of XL1-Blue cells. *Strategies*, **5**, 81-83.
- Jessell, T.M.** (2000) Neuronal specification in the spinal cord: inductive signals and transcriptional codes. *Nat Rev Genet*, **1**, 20-9.
- Johnson, J.E., Birren, S.J., Anderson, D.J.** (1990) Two rat homologues of *Drosophila* achaete-scute specifically expressed in neuronal precursors. *Nature*, **346**, 858-61.
- Jostes, B., Walther, C., Gruss, P.** (1990) The murine paired box gene, Pax7, is expressed specifically during the development of the nervous and muscular system. *Mech Dev*, **33**, 27-37.
- Joyner, A.L.** (1999) *Gene Targeting: A Practical Approach*. Oxford University Press, Oxford, United Kingdom.
- Julius, D., Basbaum, A.I.** (2001) Molecular mechanisms of nociception. *Nature*, **413**, 203-10.
- Kaehn, K., Jacob, H.J., Christ, B., Hinrichsen, K., Poelmann, R.E.** (1988) The onset of myotome formation in the chick. *Anat Embryol (Berl)*, **177**, 191-201.
- Khwaja, A., Lehmann, K., Marte, B.M., Downward, J.** (1998) Phosphoinositide-3-kinase induces scattering and tubulogenesis in epithelial cells through a novel pathway. *J Biol Chem*, **273**, 18793-801.
- Kühn, R., Rajewsky, K., Müller, W.** (1991) Generation and analysis of interleukin-4 deficient mice. *Science*, **254**, 707-10.
- Lee, K.J., Mendelsohn, M., Jessell, T.M.** (1998) Neuronal patterning by BMPs: a requirement for GDF7 in the generation of a discrete class of commissural interneurons in the mouse spinal cord. *Genes Dev*, **12**, 3394-407.
- Lee, K.J., Jessell, T.M.** (1999) The specification of dorsal cell fates in the vertebrate central nervous system. *Annu Rev Neurosci*, **22**, 261-94.
- Lee, K.J., Dietrich, P., Jessell, T.M.** (2000) Genetic ablation reveals that the roof plate is essential for dorsal interneuron specification. *Nature*, **403**, 734-40.
- Leshem, Y., Spicer, D.B., Gal-Levi, R., Halevy, O.** (2000) Hepatocyte growth factor (HGF) inhibits skeletal muscle cell differentiation: a role for the bHLH protein twist and the cdk inhibitor p27. *J Cell Physiol*, **184**, 101-9.
- Liem, K.F., Jr., Tremml, G., Roelink, H., Jessell, T.M.** (1995) Dorsal differentiation of neural plate cells induced by BMP-mediated signals from epidermal ectoderm. *Cell*, **82**, 969-79.
- Liem, K.F., Jr., Tremml, G., Jessell, T.M.** (1997) A role for the roof plate and its resident TGFbeta-related proteins in neuronal patterning in the dorsal spinal cord. *Cell*, **91**, 127-38.
- Lo, L.C., Johnson, J.E., Wuenschell, C.W., Saito, T., Anderson, D.J.** (1991) Mammalian achaete-scute homolog 1 is transiently expressed by spatially restricted subsets of early neuroepithelial and neural crest cells. *Genes Dev*, **5**, 1524-37.

- Ma, Q., Kintner, C., Anderson, D.J.** (1996) Identification of neurogenin, a vertebrate neuronal determination gene. *Cell*, **87**, 43-52.
- Ma, Q., Sommer, L., Cserjesi, P., Anderson, D.J.** (1997) Mash1 and neurogenin1 expression patterns define complementary domains of neuroepithelium in the developing CNS and are correlated with regions expressing notch ligands. *J Neurosci*, **17**, 3644-52.
- Maina, F., Casagranda, F., Audero, E., Simeone, A., Comoglio, P.M., Klein, R., Ponzetto, C.** (1996) Uncoupling of Grb2 from the Met receptor in vivo reveals complex roles in muscle development. *Cell*, **87**, 531-42.
- Maina, F., Pante, G., Helmbacher, F., Andres, R., Porthin, A., Davies, A.M., Ponzetto, C., Klein, R.** (2001) Coupling Met to specific pathways results in distinct developmental outcomes. *Mol Cell*, **7**, 1293-306.
- Mansour, S.L., Thomas, K.R., Capecchi, M.R.** (1988) Disruption of the proto-oncogene int-2 in mouse embryo-derived stem cells: a general strategy for targeting mutations to non-selectable genes. *Nature*, **336**, 348-52.
- Mansouri, A., Gruss, P.** (1998) Pax3 and Pax7 are expressed in commissural neurons and restrict ventral neuronal identity in the spinal cord. *Mech Dev*, **78**, 171-8.
- Maroto, M., Reshef, R., Münsterberg, A.E., Koester, S., Goulding, M., Lassar, A.B.** (1997) Ectopic Pax-3 activates MyoD and Myf-5 expression in embryonic mesoderm and neural tissue. *Cell*, **89**, 139-48.
- Maroun, C.R., Holgado-Madruga, M., Royal, I., Naujokas, M.A., Fournier, T.M., Wong, A.J., Park, M.** (1999) The Gab1 PH domain is required for localization of Gab1 at sites of cell-cell contact and epithelial morphogenesis downstream from the met receptor tyrosine kinase. *Mol Cell Biol*, **19**, 1784-99.
- Marsh, J.L., Erfle, M., Wykes, E.J.** (1984) The pIC plasmid and phage vectors with versatile cloning sites for recombinant selection by insertional inactivation. *Gene*, **32**, 481-5.
- McDonell, M.W., Simon, M.N., Studier, F.W.** (1977) Analysis of restriction fragments of T7 DNA and determination of molecular weights by electrophoresis in neutral and alkaline gels. *J Mol Biol*, **110**, 119-46.
- McGinnis, W., Krumlauf, R.** (1992) Homeobox genes and axial patterning. *Cell*, **68**, 283-302.
- Mennerich, D., Schäfer, K., Braun, T.** (1998) Pax-3 is necessary but not sufficient for lbx1 expression in myogenic precursor cells of the limb. *Mech Dev*, **73**, 147-58.
- Millonig, J.H., Millen, K.J., Hatten, M.E.** (2000) The mouse Dreher gene Lmx1a controls formation of the roof plate in the vertebrate CNS. *Nature*, **403**, 764-9.
- Miner, J.H., Wold, B.** (1990) Herculin, a fourth member of the MyoD family of myogenic regulatory genes. *Proc Natl Acad Sci U S A*, **87**, 1089-93.
- Mizuguchi, R., Sugimori, M., Takebayashi, H., Kosako, H., Nagao, M., Yoshida, S., Nabeshima, Y., Shimamura, K., Nakafuku, M.** (2001) Combinatorial roles of olig2 and neurogenin2 in the coordinated induction of pan-neuronal and subtype-specific properties of motoneurons. *Neuron*, **31**, 757-71.
- Montell, D.J.** (1999) The genetics of cell migration in *Drosophila melanogaster* and *Caenorhabditis elegans* development. *Development*, **126**, 3035-46.
- Montesano, R., Matsumoto, K., Nakamura, T., Orci, L.** (1991) Identification of a fibroblast-derived epithelial morphogen as hepatocyte growth factor. *Cell*, **67**, 901-8.
- Moran-Rivard, L., Kagawa, T., Saueressig, H., Gross, M.K., Burrill, J., Goulding, M.** (2001) Evx1 is a postmitotic determinant of v0 interneuron identity in the spinal cord. *Neuron*, **29**, 385-99.

- Müller, T., Brohmann, H., Pierani, A., Heppenstall, P.A., Lewin, G.R., Jessell, T.M., Birchmeier, C.** (2002) The homeodomain factor Lbx1 distinguishes two major programs of neuronal differentiation in the dorsal spinal cord. *Neuron*, in press.
- Muroyama, Y., Fujihara, M., Ikeya, M., Kondoh, H., Takada, S.** (2002) Wnt signaling plays an essential role in neuronal specification of the dorsal spinal cord. *Genes Dev*, **16**, 548-53.
- Nabeshima, Y., Hanaoka, K., Hayasaka, M., Esumi, E., Li, S., Nonaka, I.** (1993) Myogenin gene disruption results in perinatal lethality because of severe muscle defect. *Nature*, **364**, 532-5.
- Nakamura, T., Nishizawa, T., Hagiya, M., Seki, T., Shimonishi, M., Sugimura, A., Tashiro, K., Shimizu, S.** (1989) Molecular cloning and expression of human hepatocyte growth factor. *Nature*, **342**, 440-3.
- Neyt, C., Jagla, K., Thisse, C., Thisse, B., Haines, L., Currie, P.D.** (2000) Evolutionary origins of vertebrate appendicular muscle. *Nature*, **408**, 82-6.
- Nguyen, L., Holgado-Madruga, M., Maroun, C., Fixman, E.D., Kamikura, D., Fournier, T., Charest, A., Tremblay, M.L., Wong, A.J., Park, M.** (1997) Association of the multisubstrate docking protein Gab1 with the hepatocyte growth factor receptor requires a functional Grb2 binding site involving tyrosine 1356. *J Biol Chem*, **272**, 20811-9.
- Nishi, S.** (1967) *Muskeln des Rumpfes*. A. Asher & Co., Amsterdam.
- Nornes, H.O., Carry, M.** (1978) Neurogenesis in spinal cord of mouse: an autoradiographic analysis. *Brain Res*, **159**, 1-6.
- Novitch, B.G., Chen, A.I., Jessell, T.M.** (2001) Coordinate Regulation of Motor Neuron Subtype Identity and Pan-Neuronal Properties by the bHLH Repressor Olig2. *Neuron*, **31**, 773-89.
- Olson, E.N., Arnold, H.H., Rigby, P.W., Wold, B.J.** (1996) Know your neighbors: three phenotypes in null mutants of the myogenic bHLH gene MRF4. *Cell*, **85**, 1-4.
- Ordahl, C.P., Le Douarin, N.M.** (1992) Two myogenic lineages within the developing somite. *Development*, **114**, 339-53.
- Ott, M.O., Bober, E., Lyons, G., Arnold, H.H., Buckingham, M.** (1991) Early expression of the myogenic regulatory gene, myf-5, in precursor cells of skeletal muscle in the mouse embryo. *Development*, **111**, 1097-107.
- Park, M., Dean, M., Cooper, C.S., Schmidt, M., O'Brien, S.J., Blair, D.G., Vande Woude, G.F.** (1986) Mechanism of met oncogene activation. *Cell*, **45**, 895-904.
- Patapoutian, A., Yoon, J.K., Miner, J.H., Wang, S., Stark, K., Wold, B.** (1995) Disruption of the mouse MRF4 gene identifies multiple waves of myogenesis in the myotome. *Development*, **121**, 3347-58.
- Pelicci, G., Giordano, S., Zhen, Z., Salcini, A.E., Lanfrancone, L., Bardelli, A., Panayotou, G., Waterfield, M.D., Ponzetto, C., Pelicci, P.G., et al.** (1995) The motogenic and mitogenic responses to HGF are amplified by the Shc adaptor protein. *Oncogene*, **10**, 1631-8.
- Pierani, A., Brenner-Morton, S., Chiang, C., Jessell, T.M.** (1999) A sonic hedgehog-independent, retinoid-activated pathway of neurogenesis in the ventral spinal cord. *Cell*, **97**, 903-15.
- Pierani, A., Moran-Rivard, L., Sunshine, M.J., Littman, D.R., Goulding, M., Jessell, T.M.** (2001) Control of interneuron fate in the developing spinal cord by the progenitor homeodomain protein Dbx1. *Neuron*, **29**, 367-84.
- Ponzetto, C., Bardelli, A., Zhen, Z., Maina, F., dalla Zonca, P., Giordano, S., Graziani, A., Panayotou, G., Comoglio, P.M.** (1994) A multifunctional docking site mediates signaling and transformation by the hepatocyte growth factor/scatter factor receptor family. *Cell*, **77**, 261-71.

- Ramirez-Solis, R., Rivera-Perez, J., Wallace, J.D., Wims, M., Zheng, H., Bradley, A.** (1992) Genomic DNA microextraction: a method to screen numerous samples. *Anal Biochem*, **201**, 331-5.
- Rhodes, S.J., Konieczny, S.F.** (1989) Identification of MRF4: a new member of the muscle regulatory factor gene family. *Genes Dev*, **3**, 2050-61.
- Roelink, H., Porter, J.A., Chiang, C., Tanabe, Y., Chang, D.T., Beachy, P.A., Jessell, T.M.** (1995) Floor plate and motor neuron induction by different concentrations of the amino-terminal cleavage product of sonic hedgehog autoproteolysis. *Cell*, **81**, 445-55.
- Rudnicki, M.A., Braun, T., Hinuma, S., Jaenisch, R.** (1992) Inactivation of MyoD in mice leads to up-regulation of the myogenic HLH gene Myf-5 and results in apparently normal muscle development. *Cell*, **71**, 383-90.
- Rudnicki, M.A., Schnegelsberg, P.N., Stead, R.H., Braun, T., Arnold, H.H., Jaenisch, R.** (1993) MyoD or Myf-5 is required for the formation of skeletal muscle. *Cell*, **75**, 1351-9.
- Sachs, M., Brohmann, H., Zechner, D., Müller, T., Hülsken, J., Walther, I., Schaeper, U., Birchmeier, C., Birchmeier, W.** (2000) Essential role of Gab1 for signaling by the c-Met receptor in vivo. *J Cell Biol*, **150**, 1375-84.
- Saiki, R.K., Scharf, S., Faloona, F., Mullis, K.B., Horn, G.T., Erlich, H.A., Arnheim, N.** (1985) Enzymatic amplification of beta-globin genomic sequences and restriction site analysis for diagnosis of sickle cell anemia. *Science*, **230**, 1350-4.
- Saito, T., Greenwood, A., Sun, Q., Anderson, D.J.** (1995) Identification by differential RT-PCR of a novel paired homeodomain protein specifically expressed in sensory neurons and a subset of their CNS targets. *Mol Cell Neurosci*, **6**, 280-92.
- Sakkab, D., Lewitzky, M., Posern, G., Schaeper, U., Sachs, M., Birchmeier, W., Feller, S.M.** (2000) Signaling of hepatocyte growth factor/scatter factor (HGF) to the small GTPase Rap1 via the large docking protein Gab1 and the adapter protein CRKL. *J Biol Chem*, **275**, 10772-8.
- Sambrook, J., Russell, D.W.** (2001) *Molecular Cloning: A Laboratory Manual*. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York 11803-2500, USA.
- Sander, M., Paydar, S., Ericson, J., Briscoe, J., Berber, E., German, M., Jessell, T.M., Rubenstein, J.L.** (2000) Ventral neural patterning by Nkx homeobox genes: Nkx6.1 controls somatic motor neuron and ventral interneuron fates. *Genes Dev*, **14**, 2134-9.
- Sanger, F., Nicklen, S., Coulson, A.R.** (1977) DNA sequencing with chain-terminating inhibitors. *Proc Natl Acad Sci U S A*, **74**, 5463-7.
- Sassoon, D., Lyons, G., Wright, W.E., Lin, V., Lassar, A., Weintraub, H., Buckingham, M.** (1989) Expression of two myogenic regulatory factors myogenin and MyoD1 during mouse embryogenesis. *Nature*, **341**, 303-7.
- Saueressig, H., Burrill, J., Goulding, M.** (1999) Engrailed-1 and netrin-1 regulate axon pathfinding by association interneurons that project to motor neurons. *Development*, **126**, 4201-12.
- Saxton, T.M., Henkemeyer, M., Gasca, S., Shen, R., Rossi, D.J., Shalaby, F., Feng, G.S., Pawson, T.** (1997) Abnormal mesoderm patterning in mouse embryos mutant for the SH2 tyrosine phosphatase Shp-2. *Embo J*, **16**, 2352-64.
- Saxton, T.M., Pawson, T.** (1999) Morphogenetic movements at gastrulation require the SH2 tyrosine phosphatase Shp2. *Proc Natl Acad Sci U S A*, **96**, 3790-5.
- Scaal, M., Bonafede, A., Dathe, V., Sachs, M., Cann, G., Christ, B., Brand-Saberi, B.** (1999) SF/HGF is a mediator between limb patterning and muscle development. *Development*, **126**, 4885-93.

- Scacheri, P.C., Crabtree, J.S., Novotny, E.A., Garrett-Beal, L., Chen, A., Edgemon, K.A., Marx, S.J., Spiegel, A.M., Chandrasekharappa, S.C., Collins, F.S.** (2001) Bidirectional transcriptional activity of PGK-neomycin and unexpected embryonic lethality in heterozygote chimeric knockout mice. *Genesis*, **30**, 259-63.
- Schaeper, U., Gehring, N.H., Fuchs, K.P., Sachs, M., Kempkes, B., Birchmeier, W.** (2000) Coupling of Gab1 to c-Met, Grb2, and Shp2 mediates biological responses. *J Cell Biol*, **149**, 1419-32.
- Schmidt, C., Bladt, F., Goedecke, S., Brinkmann, V., Zschiesche, W., Sharpe, M., Gherardi, E., Birchmeier, C.** (1995) Scatter factor/hepatocyte growth factor is essential for liver development. *Nature*, **373**, 699-702.
- Schubert, F.R., Dietrich, S., Mootoosamy, R.C., Chapman, S.C., Lumsden, A.** (2001) Lbx1 marks a subset of interneurons in chick hindbrain and spinal cord. *Mech Dev*, **101**, 181-5.
- Schwenk, F., Baron, U., Rajewsky, K.** (1995) A cre-transgenic mouse strain for the ubiquitous deletion of loxP-flanked gene segments including deletion in germ cells. *Nucleic Acids Res*, **23**, 5080-1.
- Serafini, T., Kennedy, T.E., Galko, M.J., Mirzayan, C., Jessell, T.M., Tessier-Lavigne, M.** (1994) The netrins define a family of axon outgrowth-promoting proteins homologous to *C. elegans* UNC-6. *Cell*, **78**, 409-24.
- Sham, M.H., Vesque, C., Nonchev, S., Marshall, H., Frain, M., Gupta, R.D., Whiting, J., Wilkinson, D., Charnay, P., Krumlauf, R.** (1993) The zinc finger gene Krox20 regulates HoxB2 (Hox2.8) during hindbrain segmentation. *Cell*, **72**, 183-96.
- Shen, Y., Naujokas, M., Park, M., Ireton, K.** (2000) InIB-dependent internalization of Listeria is mediated by the Met receptor tyrosine kinase. *Cell*, **103**, 501-10.
- Shima, N., Itagaki, Y., Nagao, M., Yasuda, H., Morinaga, T., Higashio, K.** (1991) A fibroblast-derived tumor cytotoxic factor/F-TCF (hepatocyte growth factor/HGF) has multiple functions in vitro. *Cell Biol Int Rep*, **15**, 397-408.
- Smith, S.T., Jaynes, J.B.** (1996) A conserved region of engrailed, shared among all en-, gsc-, Nk1-, Nk2- and msh-class homeoproteins, mediates active transcriptional repression in vivo. *Development*, **122**, 3141-50.
- Smith, T.H., Kachinsky, A.M., Miller, J.B.** (1994) Somite subdomains, muscle cell origins, and the four muscle regulatory factor proteins. *J Cell Biol*, **127**, 95-105.
- Sonnenberg, E., Meyer, D., Weidner, K.M., Birchmeier, C.** (1993) Scatter factor/hepatocyte growth factor and its receptor, the c-met tyrosine kinase, can mediate a signal exchange between mesenchyme and epithelia during mouse development. *J Cell Biol*, **123**, 223-35.
- Sorge, J.A.** (1988) Bacteriophage lambda cloning vectors. *Biotechnology*, **10**, 43-60.
- Southern, E.M.** (1975) Detection of specific sequences among DNA fragments separated by gel electrophoresis. *J Mol Biol*, **98**, 503-17.
- Sternberg, N., Cohen, G.** (1989) Genetic analysis of the lytic replicon of bacteriophage P1. II. Organization of replicon elements. *J Mol Biol*, **207**, 111-33.
- Stoker, M., Gherardi, E., Perryman, M., Gray, J.** (1987) Scatter factor is a fibroblast-derived modulator of epithelial cell mobility. *Nature*, **327**, 239-42.
- Swartz, M.E., Eberhart, J., Pasquale, E.B., Krull, C.E.** (2001) EphA4/ephrin-A5 interactions in muscle precursor cell migration in the avian forelimb. *Development*, **128**, 4669-80.
- Tabor, S., Richardson, C.C.** (1987) DNA sequence analysis with a modified bacteriophage T7 DNA polymerase. *Proc Natl Acad Sci U S A*, **84**, 4767-71.

- Tajbakhsh, S., Buckingham, M.E.** (1994) Mouse limb muscle is determined in the absence of the earliest myogenic factor myf-5. *Proc Natl Acad Sci U S A*, **91**, 747-51.
- Tajbakhsh, S., Rocancourt, D., Cossu, G., Buckingham, M.** (1997) Redefining the genetic hierarchies controlling skeletal myogenesis: Pax-3 and Myf-5 act upstream of MyoD. *Cell*, **89**, 127-38.
- Takayama, H., La Rochelle, W.J., Anver, M., Bockman, D.E., Merlini, G.** (1996) Scatter factor/hepatocyte growth factor as a regulator of skeletal muscle and neural crest development. *Proc Natl Acad Sci U S A*, **93**, 5866-71.
- Tapscott, S.J., Davis, R.L., Thayer, M.J., Cheng, P.F., Weintraub, H., Lassar, A.B.** (1988) MyoD1: a nuclear phosphoprotein requiring a Myc homology region to convert fibroblasts to myoblasts. *Science*, **242**, 405-11.
- Tatsumi, R., Anderson, J.E., Nevoret, C.J., Halevy, O., Allen, R.E.** (1998) HGF/SF is present in normal adult skeletal muscle and is capable of activating satellite cells. *Dev Biol*, **194**, 114-28.
- Thaler, J., Harrison, K., Sharma, K., Lettieri, K., Kehrl, J., Pfaff, S.L.** (1999) Active suppression of interneuron programs within developing motor neurons revealed by analysis of homeodomain factor HB9. *Neuron*, **23**, 675-87.
- Thomas, K.R., Capecchi, M.R.** (1987) Site-directed mutagenesis by gene targeting in mouse embryo-derived stem cells. *Cell*, **51**, 503-12.
- Tremblay, P., Dietrich, S., Mericskay, M., Schubert, F.R., Li, Z., Paulin, D.** (1998) A crucial role for Pax3 in the development of the hypaxial musculature and the long-range migration of muscle precursors. *Dev Biol*, **203**, 49-61.
- Uehara, Y., Minowa, O., Mori, C., Shiota, K., Kuno, J., Noda, T., Kitamura, N.** (1995) Placental defect and embryonic lethality in mice lacking hepatocyte growth factor/scatter factor. *Nature*, **373**, 702-5.
- Vallstedt, A., Muhr, J., Pattyn, A., Pierani, A., Mendelsohn, M., Sander, M., Jessell, T.M., Ericson, J.** (2001) Different levels of repressor activity assign redundant and specific roles to nkx6 genes in motor neuron and interneuron specification. *Neuron*, **31**, 743-55.
- Venuti, J.M., Morris, J.H., Vivian, J.L., Olson, E.N., Klein, W.H.** (1995) Myogenin is required for late but not early aspects of myogenesis during mouse development. *J Cell Biol*, **128**, 563-76.
- Vogelstein, B., Gillespie, D.** (1979) Preparative and analytical purification of DNA from agarose. *Proc Natl Acad Sci U S A*, **76**, 615-9.
- Wang, H.U., Anderson, D.J.** (1997) Eph family transmembrane ligands can mediate repulsive guidance of trunk neural crest migration and motor axon outgrowth. *Neuron*, **18**, 383-96.
- Webb, S.E., Lee, K.K., Tang, M.K., Ede, D.A.** (1997) Fibroblast growth factors 2 and 4 stimulate migration of mouse embryonic limb myogenic cells. *Dev Dyn*, **209**, 206-16.
- Weidner, K.M., Arakaki, N., Hartmann, G., Vandekerckhove, J., Weingart, S., Rieder, H., Fonatsch, C., Tsubouchi, H., Hishida, T., Daikuhara, Y., Birchmeier, W.** (1991) Evidence for the identity of human scatter factor and human hepatocyte growth factor. *Proc Natl Acad Sci U S A*, **88**, 7001-5.
- Weidner, K.M., Di Cesare, S., Sachs, M., Brinkmann, V., Behrens, J., Birchmeier, W.** (1996) Interaction between Gab1 and the c-Met receptor tyrosine kinase is responsible for epithelial morphogenesis. *Nature*, **384**, 173-6.
- Weintraub, H., Tapscott, S.J., Davis, R.L., Thayer, M.J., Adam, M.A., Lassar, A.B., Miller, A.D.** (1989) Activation of muscle-specific genes in pigment, nerve, fat, liver, and fibroblast cell lines by forced expression of MyoD. *Proc Natl Acad Sci U S A*, **86**, 5434-8.

- Wilkinson, D.G.** (1992) *In situ Hybridization: A Practical Approach*. Oxford University Press, Oxford, United Kingdom.
- Williams, B.A., Ordahl, C.P.** (1994) Pax-3 expression in segmental mesoderm marks early stages in myogenic cell specification. *Development*, **120**, 785-96.
- Wright, W.E., Sasoon, D.A., Lin, V.K.** (1989) Myogenin, a factor regulating myogenesis, has a domain homologous to MyoD. *Cell*, **56**, 607-17.
- Yang, X.M., Vogan, K., Gros, P., Park, M.** (1996) Expression of the met receptor tyrosine kinase in muscle progenitor cells in somites and limbs is absent in Splotch mice. *Development*, **122**, 2163-71.
- Yee, S.P., Rigby, P.W.** (1993) The regulation of myogenin gene expression during the embryonic development of the mouse. *Genes Dev*, **7**, 1277-89.
- Yoon, J.K., Olson, E.N., Arnold, H.H., Wold, B.J.** (1997) Different MRF4 knockout alleles differentially disrupt Myf-5 expression: cis-regulatory interactions at the MRF4/Myf-5 locus. *Dev Biol*, **188**, 349-62.
- Yu, D.H., Qu, C.K., Henegariu, O., Lu, X., Feng, G.S.** (1998) Protein-tyrosine phosphatase Shp-2 regulates cell spreading, migration, and focal adhesion. *J Biol Chem*, **273**, 21125-31.
- Yu, T.W., Bargmann, C.I.** (2001) Dynamic regulation of axon guidance. *Nat Neurosci*, **4**, 1169-76.
- Zhang, W., Behringer, R.R., Olson, E.N.** (1995) Inactivation of the myogenic bHLH gene MRF4 results in up-regulation of myogenin and rib anomalies. *Genes Dev*, **9**, 1388-99.
- Zhou, Q., Choi, G., Anderson, D.J.** (2001) The bHLH Transcription Factor Olig2 Promotes Oligodendrocyte Differentiation in Collaboration with Nkx2.2. *Neuron*, **31**, 791-807.