

BIBLIOGRAFIA

- Abraham, H., and G. Meyer. 2003. Reelin-expressing neurons in the postnatal and adult human hippocampal formation. *Hippocampus*. 13:715-27.
- Alcantara, S., M. Ruiz, G. D'Arcangelo, F. Ezan, L. de Lecea, T. Curran, C. Sotelo, and E. Soriano. 1998. Regional and cellular patterns of reelin mRNA expression in the forebrain of the developing and adult mouse. *J Neurosci*. 18:7779-99.
- Aletsee, C., A. Beros, L. Mullen, S. Palacios, K. Pak, S. Dazert, and A.F. Ryan. 2001. Ras/MEK but not p38 signaling mediates NT-3-induced neurite extension from spiral ganglion neurons. *J Assoc Res Otolaryngol*. 2:377-87.
- Allendoerfer, K.L., and C.J. Shatz. 1994. The subplate, a transient neocortical structure: its role in the development of connections between thalamus and cortex. *Annu Rev Neurosci*. 17:185-218.
- Alvarez-Buylla, A., and D.A. Lim. 2004. For the long run: maintaining germinal niches in the adult brain. *Neuron*. 41:683-6.
- Alvarez-Dolado, M., M. Ruiz, J.A. Del Rio, S. Alcantara, F. Burgaya, M. Sheldon, K. Nakajima, J. Bernal, B.W. Howell, T. Curran, E. Soriano, and A. Munoz. 1999. Thyroid hormone regulates reelin and dab1 expression during brain development. *J Neurosci*. 19:6979-93.
- Amaral, D.G., C. Dolorfo, and P. Alvarez-Royo. 1991. Organization of CA1 projections to the subiculum: a PHA-L analysis in the rat. *Hippocampus*. 1:415-35.
- Amaral, D.G., and M.P. Witter. 2004. Hippocampal Formation. In *The Rat Nervous System*. G. Paxinos, editor.
- Anand-Apte, B., B.R. Zetter, A. Viswanathan, R.G. Qiu, J. Chen, R. Ruggieri, and M. Symons. 1997. Platelet-derived growth factor and fibronectin-stimulated migration are differentially regulated by the Rac and extracellular signal-regulated kinase pathways. *J Biol Chem*. 272:30688-92.
- Andersen, P., T.V. Bliss, and K.K. Skrede. 1971. Unit analysis of hippocampal population spikes. *Exp Brain Res*. 13:208-21.
- Andersen, P., B. Holmqvist, and P.E. Voorhoeve. 1966. Entorhinal activation of dentate granule cells. *Acta Physiol Scand*. 66:448-60.
- Angevine, J., and R. Sidman. 1961. Autoradiographic study of cell migration during histogenesis of cerebral cortex in the mouse. *Nature*. 192:766-68.
- Arnaud, L., B.A. Ballif, and J.A. Cooper. 2003a. Regulation of protein tyrosine kinase signaling by substrate degradation during brain development. *Mol Cell Biol*. 23:9293-302.
- Arnaud, L., B.A. Ballif, E. Forster, and J.A. Cooper. 2003b. Fyn tyrosine kinase is a critical regulator of disabled-1 during brain development. *Curr Biol*. 13:9-17.
- Atkins, C.M., J.C. Selcher, J.J. Petraitis, J.M. Trzaskos, and J.D. Sweatt. 1998. The MAPK cascade is required for mammalian associative learning. *Nat Neurosci*. 1:602-9.
- Aungst, J.L., P.M. Heyward, A.C. Puche, S.V. Karnup, A. Hayar, G. Szabo, and M.T. Shipley. 2003. Centre-surround inhibition among olfactory bulb glomeruli. *Nature*. 426:623-9.
- Ballif, B.A., L. Arnaud, W.T. Arthur, D. Guris, A. Imamoto, and J.A. Cooper. 2004. Activation of a Dab1/CrkL/C3G/Rap1 pathway in Reelin-stimulated neurons. *Curr Biol*. 14:606-10.
- Ballif, B.A., L. Arnaud, and J.A. Cooper. 2003. Tyrosine phosphorylation of Disabled-1 is essential for Reelin-stimulated activation of Akt and Src family kinases. *Brain Res Mol Brain Res*. 117:152-9.

- Bannister, A.P. 2005. Inter- and intra-laminar connections of pyramidal cells in the neocortex. *Neurosci Res.* 53:95-103.
- Bar, I., C. Lambert De Rouvroit, I. Royaux, D.B. Krizman, C. Dernoncourt, D. Ruelle, M.C. Beckers, and A.M. Goffinet. 1995. A YAC contig containing the reeler locus with preliminary characterization of candidate gene fragments. *Genomics.* 26:543-9.
- Barallobre, M.J., J.A. Del Rio, S. Alcantara, V. Borrell, F. Aguado, M. Ruiz, M.A. Carmona, M. Martin, M. Fabre, R. Yuste, M. Tessier-Lavigne, and E. Soriano. 2000. Aberrant development of hippocampal circuits and altered neural activity in netrin 1-deficient mice. *Development.* 127:4797-810.
- Barallobre, M.J., M. Pascual, J.A. Del Rio, and E. Soriano. 2005. The Netrin family of guidance factors: emphasis on Netrin-1 signalling. *Brain Res Brain Res Rev.* 49:22-47.
- Beffert, U., G. Morfini, H.H. Bock, H. Reyna, S.T. Brady, and J. Herz. 2002. Reelin-mediated signaling locally regulates protein kinase B/Akt and glycogen synthase kinase 3beta. *J Biol Chem.* 277:49958-64.
- Beffert, U., E.J. Weeber, A. Durudas, S. Qiu, I. Masiulis, J.D. Sweatt, W.P. Li, G. Adelmann, M. Frotscher, R.E. Hammer, and J. Herz. 2005. Modulation of synaptic plasticity and memory by Reelin involves differential splicing of the lipoprotein receptor Apoer2. *Neuron.* 47:567-79.
- Beffert, U., E.J. Weeber, G. Morfini, J. Ko, S.T. Brady, L.H. Tsai, J.D. Sweatt, and J. Herz. 2004. Reelin and cyclin-dependent kinase 5-dependent signals cooperate in regulating neuronal migration and synaptic transmission. *J Neurosci.* 24:1897-906.
- Belluscio, L., C. Lodovichi, P. Feinstein, P. Mombaerts, and L.C. Katz. 2002. Odorant receptors instruct functional circuitry in the mouse olfactory bulb. *Nature.* 419:296-300.
- Belluzzi, O., M. Benedusi, J. Ackman, and J.J. LoTurco. 2003. Electrophysiological differentiation of new neurons in the olfactory bulb. *J Neurosci.* 23:10411-8.
- Benhayon, D., S. Magdaleno, and T. Curran. 2003. Binding of purified Reelin to ApoER2 and VLDLR mediates tyrosine phosphorylation of Disabled-1. *Brain Res Mol Brain Res.* 112:33-45.
- Bhalla, U.S., and R. Iyengar. 1999. Emergent properties of networks of biological signaling pathways. *Science.* 283:381-7.
- Bhat, R.V., S.L. Budd Haeberlein, and J. Avila. 2004. Glycogen synthase kinase 3: a drug target for CNS therapies. *J Neurochem.* 89:1313-7.
- Blackstad, T.W. 1956. Commissural connections of the hippocampal region in the rat, with special reference to their mode of termination. *J Comp Neurol.* 105:417-537.
- Blackstad, T.W., K. Brink, J. Hem, and B. Jeune. 1970. Distribution of hippocampal mossy fibers in the rat. An experimental study with silver impregnation methods. *J Comp Neurol.* 138:433-49.
- Blum, S., A.N. Moore, F. Adams, and P.K. Dash. 1999. A mitogen-activated protein kinase cascade in the CA1/CA2 subfield of the dorsal hippocampus is essential for long-term spatial memory. *J Neurosci.* 19:3535-44.
- Bock, H.H., and J. Herz. 2003. Reelin activates SRC family tyrosine kinases in neurons. *Curr Biol.* 13:18-26.

- Bock, H.H., Y. Jossin, P. Liu, E. Forster, P. May, A.M. Goffinet, and J. Herz. 2003. Phosphatidylinositol 3-kinase interacts with the adaptor protein Dab1 in response to Reelin signaling and is required for normal cortical lamination. *J Biol Chem.* 278:38772-9.
- Borrell, V., J.A. Del Rio, S. Alcantara, M. Derer, A. Martinez, G. D'Arcangelo, K. Nakajima, K. Mikoshiba, P. Derer, T. Curran, and E. Soriano. 1999a. Reelin regulates the development and synaptogenesis of the layer-specific entorhino-hippocampal connections. *J Neurosci.* 19:1345-58.
- Borrell, V., M. Ruiz, J.A. Del Rio, and E. Soriano. 1999b. Development of commissural connections in the hippocampus of reeler mice: evidence of an inhibitory influence of Cajal-Retzius cells. *Exp Neurol.* 156:268-82.
- Bos, J.L. 2005. Linking Rap to cell adhesion. *Curr Opin Cell Biol.* 17:123-8.
- Bos, J.L., J. de Rooij, and K.A. Reedquist. 2001. Rap1 signalling: adhering to new models. *Nat Rev Mol Cell Biol.* 2:369-77.
- Bothwell, M., and E. Giniger. 2000. Alzheimer's disease: neurodevelopment converges with neurodegeneration. *Cell.* 102:271-3.
- Bozon, B., S. Davis, and S. Laroche. 2002. Regulated transcription of the immediate-early gene Zif268: mechanisms and gene dosage-dependent function in synaptic plasticity and memory formation. *Hippocampus.* 12:570-7.
- Bredt, D.S. 2000. Cell biology. Reeling CASK into the nucleus. *Nature.* 404:241-2.
- Buchwalter, G., C. Gross, and B. Waslyk. 2004. Ets ternary complex transcription factors. *Gene.* 324:1-14.
- Buck, L., and R. Axel. 1991. A novel multigene family may encode odorant receptors: a molecular basis for odor recognition. *Cell.* 65:175-87.
- Buday, L., L. Wunderlich, and P. Tamas. 2002. The Nck family of adapter proteins: regulators of actin cytoskeleton. *Cell Signal.* 14:723-31.
- Bulfone, A., S.M. Smiga, K. Shimamura, A. Peterson, L. Puelles, and J.L. Rubenstein. 1995. T-brain-1: a homolog of Brachyury whose expression defines molecularly distinct domains within the cerebral cortex. *Neuron.* 15:63-78.
- Burgin, K.E., M.N. Waxham, S. Rickling, S.A. Westgate, W.C. Mobley, and P.T. Kelly. 1990. In situ hybridization histochemistry of Ca²⁺/calmodulin-dependent protein kinase in developing rat brain. *J Neurosci.* 10:1788-98.
- Cantley, L.C. 2002. The phosphoinositide 3-kinase pathway. *Science.* 296:1655-7.
- Cariboni, A., S. Rakic, A. Liapi, R. Maggi, A. Goffinet, and J.G. Parnavelas. 2005. Reelin provides an inhibitory signal in the migration of gonadotropin-releasing hormone neurons. *Development.* 132:4709-18.
- Carleton, A., L.T. Petreanu, R. Lansford, A. Alvarez-Buylla, and P.M. Lledo. 2003. Becoming a new neuron in the adult olfactory bulb. *Nat Neurosci.* 6:507-18.
- Caron, E. 2003. Cellular functions of the Rap1 GTP-binding protein: a pattern emerges. *J Cell Sci.* 116:435-40.
- Caviness, V.S., Jr. 1982. Neocortical histogenesis in normal and reeler mice: a developmental study based upon [3H]thymidine autoradiography. *Brain Res.* 256:293-302.
- Caviness, V.S., Jr., and P. Rakic. 1978. Mechanisms of cortical development: a view from mutations in mice. *Annu Rev Neurosci.* 1:297-326.
- Chae, T., Y.T. Kwon, R. Bronson, P. Dikkes, E. Li, and L.H. Tsai. 1997. Mice lacking p35, a neuronal specific activator of Cdk5, display cortical lamination defects, seizures, and adult lethality. *Neuron.* 18:29-42.

- Charles, C.H., H. Sun, L.F. Lau, and N.K. Tonks. 1993. The growth factor-inducible immediate-early gene 3CH134 encodes a protein-tyrosine-phosphatase. *Proc Natl Acad Sci U S A.* 90:5292-6.
- Chen, M.L., S.Y. Chen, C.H. Huang, and C.H. Chen. 2002a. Identification of a single nucleotide polymorphism at the 5' promoter region of human reelin gene and association study with schizophrenia. *Mol Psychiatry.* 7:447-8.
- Chen, Y., U. Beffert, M. Ertunc, T.S. Tang, E.T. Kavalali, I. Bezprozvanny, and J. Herz. 2005. Reelin modulates NMDA receptor activity in cortical neurons. *J Neurosci.* 25:8209-16.
- Chen, Y., R.P. Sharma, R.H. Costa, E. Costa, and D.R. Grayson. 2002b. On the epigenetic regulation of the human reelin promoter. *Nucleic Acids Res.* 30:2930-9.
- Chong, H., H.G. Vikis, and K.L. Guan. 2003. Mechanisms of regulating the Raf kinase family. *Cell Signal.* 15:463-9.
- Claiborne, B.J., D.G. Amaral, and W.M. Cowan. 1986. A light and electron microscopic analysis of the mossy fibers of the rat dentate gyrus. *J Comp Neurol.* 246:435-58.
- Cole, A.J., D.W. Saffen, J.M. Baraban, and P.F. Worley. 1989. Rapid increase of an immediate early gene messenger RNA in hippocampal neurons by synaptic NMDA receptor activation. *Nature.* 340:474-6.
- Colicelli, J. 2004. Human RAS superfamily proteins and related GTPases. *Sci STKE.* 2004:RE13.
- Cooper, J.A., and B.W. Howell. 1999. Lipoprotein receptors: signaling functions in the brain? *Cell.* 97:671-4.
- Costa, E., Y. Chen, J. Davis, E. Dong, J.S. Noh, L. Tremolizzo, M. Veldic, D.R. Grayson, and A. Guidotti. 2002a. REELIN and Schizophrenia:: A Disease at the Interface of the Genome and the Epigenome. *Mol Interv.* 2:47-57.
- Costa, E., J. Davis, C. Pesold, P. Tueting, and A. Guidotti. 2002b. The heterozygote reeler mouse as a model for the development of a new generation of antipsychotics. *Curr Opin Pharmacol.* 2:56-62.
- D'Arcangelo, G. 2005. Apoer2: a reelin receptor to remember. *Neuron.* 47:471-3
- D'Arcangelo, G., and T. Curran. 1998. Reeler: new tales on an old mutant mouse. *Bioessays.* 20:235-44.
- D'Arcangelo, G., R. Homayouni, L. Keshvara, D.S. Rice, M. Sheldon, and T. Curran. 1999. Reelin is a ligand for lipoprotein receptors. *Neuron.* 24:471-9.
- D'Arcangelo, G., G.G. Miao, S.C. Chen, H.D. Soares, J.I. Morgan, and T. Curran. 1995. A protein related to extracellular matrix proteins deleted in the mouse mutant reeler. *Nature.* 374:719-23.
- D'Arcangelo, G., G.G. Miao, and T. Curran. 1996. Detection of the reelin breakpoint in reeler mice. *Brain Res Mol Brain Res.* 39:234-6.
- D'Arcangelo, G., K. Nakajima, T. Miyata, M. Ogawa, K. Mikoshiba, and T. Curran. 1997. Reelin is a secreted glycoprotein recognized by the CR-50 monoclonal antibody. *J Neurosci.* 17:23-31.
- Davis, S., P. Vanhoutte, C. Pages, J. Caboche, and S. Laroche. 2000. The MAPK/ERK cascade targets both Elk-1 and cAMP response element-binding protein to control long-term potentiation-dependent gene expression in the dentate gyrus in vivo. *J Neurosci.* 20:4563-72.

- de Bergeyck, V., B. Naerhuyzen, A.M. Goffinet, and C. Lambert de Rouvroit. 1998. A panel of monoclonal antibodies against reelin, the extracellular matrix protein defective in reeler mutant mice. *J Neurosci Methods.* 82:17-24.
- de Bergeyck, V., K. Nakajima, C. Lambert de Rouvroit, B. Naerhuyzen, A.M. Goffinet, T. Miyata, M. Ogawa, and K. Mikoshiba. 1997. A truncated Reelin protein is produced but not secreted in the 'Orleans' reeler mutation (Reln[rl-Orl]). *Brain Res Mol Brain Res.* 50:85-90.
- Deisseroth, K., S. Singla, H. Toda, M. Monje, T.D. Palmer, and R.C. Malenka. 2004. Excitation-neurogenesis coupling in adult neural stem/progenitor cells. *Neuron.* 42:535-52.
- Del Rio, J.A., C. Gonzalez-Billault, J.M. Urena, E.M. Jimenez, M.J. Barallobre, M. Pascual, L. Pujadas, S. Simo, A. La Torre, F. Wandosell, J. Avila, and E. Soriano. 2004. MAP1B is required for Netrin 1 signaling in neuronal migration and axonal guidance. *Curr Biol.* 14:840-50.
- Denaxa, M., C.H. Chan, M. Schachner, J.G. Parnavelas, and D. Karagogeos. 2001. The adhesion molecule TAG-1 mediates the migration of cortical interneurons from the ganglionic eminence along the corticofugal fiber system. *Development.* 128:4635-44.
- Derer, P. 1985. Comparative localization of Cajal-Retzius cells in the neocortex of normal and reeler mutant mice fetuses. *Neurosci Lett.* 54:1-6.
- Derer, P., M. Derer, and A. Goffinet. 2001. Axonal secretion of Reelin by Cajal-Retzius cells: evidence from comparison of normal and Reln(Orl) mutant mice. *J Comp Neurol.* 440:136-43.
- Desbarats, J., R.B. Birge, M. Mimouni-Rongy, D.E. Weinstein, J.S. Palerme, and M.K. Newell. 2003. Fas engagement induces neurite growth through ERK activation and p35 upregulation. *Nat Cell Biol.* 5:118-25.
- Dickson, B.J. 2002. Molecular mechanisms of axon guidance. *Science.* 298:1959-64.
- Doetsch, F. 2003. The glial identity of neural stem cells. *Nat Neurosci.* 6:1127-34.
- Doetsch, F., and R. Hen. 2005. Young and excitable: the function of new neurons in the adult mammalian brain. *Curr Opin Neurobiol.* 15:121-8.
- Douglas, R.J., and K.A. Martin. 2004. Neuronal circuits of the neocortex. *Annu Rev Neurosci.* 27:419-51.
- Dulabon, L., E.C. Olson, M.G. Taglienti, S. Eisenhuth, B. McGrath, C.A. Walsh, J.A. Kreidberg, and E.S. Anton. 2000. Reelin binds alpha3beta1 integrin and inhibits neuronal migration. *Neuron.* 27:33-44.
- Elowe, S., S.J. Holland, S. Kulkarni, and T. Pawson. 2001. Downregulation of the Ras-mitogen-activated protein kinase pathway by the EphB2 receptor tyrosine kinase is required for ephrin-induced neurite retraction. *Mol Cell Biol.* 21:7429-41.
- Encinas, M., M. Iglesias, N. Llecha, and J.X. Comella. 1999. Extracellular-regulated kinases and phosphatidylinositol 3-kinase are involved in brain-derived neurotrophic factor-mediated survival and neuritogenesis of the neuroblastoma cell line SH-SY5Y. *J Neurochem.* 73:1409-21.
- English, J.D., and J.D. Sweatt. 1996. Activation of p42 mitogen-activated protein kinase in hippocampal long term potentiation. *J Biol Chem.* 271:24329-32.
- English, J.D., and J.D. Sweatt. 1997. A requirement for the mitogen-activated protein kinase cascade in hippocampal long term potentiation. *J Biol Chem.* 272:19103-6.
- Falconer, D.S. 1951. Two new mutants 'trembler' and 'reeler', with neurological actions in the house mouse. *J Genet.* 50:192-201.

- Farooq, A., and M.M. Zhou. 2004. Structure and regulation of MAPK phosphatases. *Cell Signal.* 16:769-79.
- Fatemi, S.H., J.L. Kroll, and J.M. Stary. 2001. Altered levels of Reelin and its isoforms in schizophrenia and mood disorders. *Neuroreport.* 12:3209-15.
- Feller, S.M. 2001. Crk family adaptors-signalling complex formation and biological roles. *Oncogene.* 20:6348-71.
- Feng, Y., and C.A. Walsh. 2001. Protein-protein interactions, cytoskeletal regulation and neuronal migration. *Nat Rev Neurosci.* 2:408-16.
- Flanagan, J.G. 1999. Life on the road. *Nature.* 401:747-8.
- Frotscher, M., P. Kugler, U. Misgeld, and K. Zilles. 1988. Neurotransmission in the Hippocampus.
- Fu, M., X. Zhu, J. Zhang, J. Liang, Y. Lin, L. Zhao, M.U. Ehrengruber, and Y.E. Chen. 2003. Egr-1 target genes in human endothelial cells identified by microarray analysis. *Gene.* 315:33-41.
- Gilbert, C.D. 1983. Microcircuitry of the visual cortex. *Annu Rev Neurosci.* 6:217-47.
- Gilbert, C.D., and T.N. Wiesel. 1983. Functional organization of the visual cortex. *Prog Brain Res.* 58:209-18.
- Gilbert, S.F. 2000. Developmental biology.
- Gilmore, E.C., T. Ohshima, A.M. Goffinet, A.B. Kulkarni, and K. Herrup. 1998. Cyclin-dependent kinase 5-deficient mice demonstrate novel developmental arrest in cerebral cortex. *J Neurosci.* 18:6370-7.
- Giraldo, P., and L. Montoliu. 2001. Size matters: use of YACs, BACs and PACs in transgenic animals. *Transgenic Res.* 10:83-103.
- Goffinet, A.M. 1979. An early development defect in the cerebral cortex of the reeler mouse. A morphological study leading to a hypothesis concerning the action of the mutant gene. *Anat Embryol (Berl).* 157:205-16.
- Goffinet, A.M. 1984. Events governing organization of postmigratory neurons: studies on brain development in normal and reeler mice. *Brain Res.* 319:261-96.
- Goffinet, A.M., and C. Dernoncourt. 1991. Localization of the reeler gene relative to flanking loci on mouse chromosome 5. *Mamm Genome.* 1:100-3.
- Goldowitz, D., R.C. Cushing, E. Laywell, G. D'Arcangelo, M. Sheldon, H.O. Sweet, M. Davisson, D. Steindler, and T. Curran. 1997. Cerebellar disorganization characteristic of reeler in scrambler mutant mice despite presence of reelin. *J Neurosci.* 17:8767-77.
- Gonzalez-Billault, C., J.A. Del Rio, J.M. Urena, E.M. Jimenez-Mateos, M.J. Barallobre, M. Pascual, L. Pujadas, S. Simo, A.L. Torre, R. Gavin, F. Wandosell, E. Soriano, and J. Avila. 2005. A role of MAP1B in Reelin-dependent neuronal migration. *Cereb Cortex.* 15:1134-45.
- Goold, R.G., R. Owen, and P.R. Gordon-Weeks. 1999. Glycogen synthase kinase 3beta phosphorylation of microtubule-associated protein 1B regulates the stability of microtubules in growth cones. *J Cell Sci.* 112 (Pt 19):3373-84.
- Gordon, J.W., G.A. Scangos, D.J. Plotkin, J.A. Barbosa, and F.H. Ruddle. 1980. Genetic transformation of mouse embryos by microinjection of purified DNA. *Proc Natl Acad Sci U S A.* 77:7380-4.
- Gossen, M., and H. Bujard. 1992. Tight control of gene expression in mammalian cells by tetracycline-responsive promoters. *Proc Natl Acad Sci U S A.* 89:5547-51.
- Gossen, M., S. Freundlieb, G. Bender, G. Muller, W. Hillen, and H. Bujard. 1995. Transcriptional activation by tetracyclines in mammalian cells. *Science.* 268:1766-9.

- Grilli, M., G.F. Toninelli, D. Uberti, P. Spano, and M. Memo. 2003. Alzheimer's disease linking neurodegeneration with neurodevelopment. *Funct Neurol.* 18:145-8.
- Guan, K.L., and Y. Rao. 2003. Signalling mechanisms mediating neuronal responses to guidance cues. *Nat Rev Neurosci.* 4:941-56.
- Guenet, J.L. 1961. A new allele of reeler. *Mouse News.* 41.
- Hack, I., M. Bancila, K. Loulier, P. Carroll, and H. Cremer. 2002. Reelin is a detachment signal in tangential chain-migration during postnatal neurogenesis. *Nat Neurosci.* 5:939-45.
- Hagg, T. 2005. Molecular regulation of adult CNS neurogenesis: an integrated view. *Trends Neurosci.* 28:589-95.
- Hamburgh, M. 1960. Observations on the neuropathology of 'reeler', a neurological mutation in mice. *Experientia.* 16.
- Harada, T., T. Morooka, S. Ogawa, and E. Nishida. 2001. ERK induces p35, a neuron-specific activator of Cdk5, through induction of Egr1. *Nat Cell Biol.* 3:453-9.
- Hartmann, D., B. De Strooper, and P. Saftig. 1999. Presenilin-1 deficiency leads to loss of Cajal-Retzius neurons and cortical dysplasia similar to human type 2 lissencephaly. *Curr Biol.* 9:719-27.
- Hatten, M.E. 1999. Central nervous system neuronal migration. *Annu Rev Neurosci.* 22:511-39.
- Hatten, M.E. 2002. New directions in neuronal migration. *Science.* 297:1660-3.
- Hauck, C.R., D.J. Sieg, D.A. Hsia, J.C. Loftus, W.A. Gaarde, B.P. Monia, and D.D. Schlaepfer. 2001. Inhibition of focal adhesion kinase expression or activity disrupts epidermal growth factor-stimulated signaling promoting the migration of invasive human carcinoma cells. *Cancer Res.* 61:7079-90.
- Herrick, T.M., and J.A. Cooper. 2002. A hypomorphic allele of dab1 reveals regional differences in reelin-Dab1 signaling during brain development. *Development.* 129:787-96.
- Herz, J., and H.H. Bock. 2002. Lipoprotein receptors in the nervous system. *Annu Rev Biochem.* 71:405-34.
- Hevner, R.F., L. Shi, N. Justice, Y. Hsueh, M. Sheng, S. Smiga, A. Bulfone, A.M. Goffinet, A.T. Campagnoni, and J.L. Rubenstein. 2001. Tbr1 regulates differentiation of the preplate and layer 6. *Neuron.* 29:353-66.
- Hiesberger, T., M. Trommsdorff, B.W. Howell, A. Goffinet, M.C. Mumby, J.A. Cooper, and J. Herz. 1999. Direct binding of Reelin to VLDL receptor and ApoE receptor 2 induces tyrosine phosphorylation of disabled-1 and modulates tau phosphorylation. *Neuron.* 24:481-9.
- Hjorth-Simonsen, A. 1972. Projection of the lateral part of the entorhinal area to the hippocampus and fascia dentata. *J Comp Neurol.* 146:219-32.
- Hjorth-Simonsen, A., and B. Jeune. 1972. Origin and termination of the hippocampal perforant path in the rat studied by silver impregnation. *J Comp Neurol.* 144:215-32.
- Homayouni, R., S. Magdaleno, L. Keshvara, D.S. Rice, and T. Curran. 2003. Interaction of Disabled-1 and the GTPase activating protein Dab2IP in mouse brain. *Brain Res Mol Brain Res.* 115:121-9.
- Homayouni, R., D.S. Rice, M. Sheldon, and T. Curran. 1999. Disabled-1 binds to the cytoplasmic domain of amyloid precursor-like protein 1. *J Neurosci.* 19:7507-15.

- Hong, S.E., Y.Y. Shugart, D.T. Huang, S.A. Shahwan, P.E. Grant, J.O. Hourihane, N.D. Martin, and C.A. Walsh. 2000. Autosomal recessive lissencephaly with cerebellar hypoplasia is associated with human RELN mutations. *Nat Genet.* 26:93-6.
- Howell, B.W., F.B. Gertler, and J.A. Cooper. 1997a. Mouse disabled (mDab1): a Src binding protein implicated in neuronal development. *Embo J.* 16:121-32.
- Howell, B.W., R. Hawkes, P. Soriano, and J.A. Cooper. 1997b. Neuronal position in the developing brain is regulated by mouse disabled-1. *Nature.* 389:733-7.
- Howell, B.W., T.M. Herrick, and J.A. Cooper. 1999a. Reelin-induced tyrosine phosphorylation of disabled 1 during neuronal positioning. *Genes Dev.* 13:643-8.
- Howell, B.W., T.M. Herrick, J.D. Hildebrand, Y. Zhang, and J.A. Cooper. 2000. Dab1 tyrosine phosphorylation sites relay positional signals during mouse brain development. *Curr Biol.* 10:877-85.
- Howell, B.W., L.M. Lanier, R. Frank, F.B. Gertler, and J.A. Cooper. 1999b. The disabled 1 phosphotyrosine-binding domain binds to the internalization signals of transmembrane glycoproteins and to phospholipids. *Mol Cell Biol.* 19:5179-88.
- Hsueh, Y.P., T.F. Wang, F.C. Yang, and M. Sheng. 2000. Nuclear translocation and transcription regulation by the membrane-associated guanylate kinase CASK/LIN-2. *Nature.* 404:298-302.
- Huang, C., K. Jacobson, and M.D. Schaller. 2004a. MAP kinases and cell migration. *J Cell Sci.* 117:4619-28.
- Huang, E.J., and L.F. Reichardt. 2003. Trk receptors: roles in neuronal signal transduction. *Annu Rev Biochem.* 72:609-42.
- Huang, Y., S. Magdaleno, R. Hopkins, C. Slaughter, T. Curran, and L. Keshvara. 2004b. Tyrosine phosphorylated Disabled 1 recruits Crk family adapter proteins. *Biochem Biophys Res Commun.* 318:204-12.
- Huang, Y., V. Shah, T. Liu, and L. Keshvara. 2005. Signaling through Disabled 1 requires phosphoinositide binding. *Biochem Biophys Res Commun.* 331:1460-8.
- Huber, A.B., A.L. Kolodkin, D.D. Ginty, and J.F. Cloutier. 2003. Signaling at the growth cone: ligand-receptor complexes and the control of axon growth and guidance. *Annu Rev Neurosci.* 26:509-63.
- Huynh-Do, U., C. Vindis, H. Liu, D.P. Cerretti, J.T. McGrew, M. Enriquez, J. Chen, and T.O. Daniel. 2002. Ephrin-B1 transduces signals to activate integrin-mediated migration, attachment and angiogenesis. *J Cell Sci.* 115:3073-81.
- Ikeda, Y., and T. Terashima. 1997. Expression of reelin, the gene responsible for the reeler mutation, in embryonic development and adulthood in the mouse. *Dev Dyn.* 210:157-72.
- Impagnatiello, F., A.R. Guidotti, C. Pesold, Y. Dwivedi, H. Caruncho, M.G. Pisu, D.P. Uzunov, N.R. Smalheiser, J.M. Davis, G.N. Pandey, G.D. Pappas, P. Tueting, R.P. Sharma, and E. Costa. 1998. A decrease of reelin expression as a putative vulnerability factor in schizophrenia. *Proc Natl Acad Sci U S A.* 95:15718-23.
- Jamot, L., J.Y. Bertholet, and W.E. Crusio. 1994. Neuroanatomical divergence between two substrains of C57BL/6J inbred mice entails differential radial-maze learning. *Brain Res.* 644:352-6.
- Johnson, G.L., and R. Lapadat. 2002. Mitogen-activated protein kinase pathways mediated by ERK, JNK, and p38 protein kinases. *Science.* 298:1911-2.

- Jones, M.W., M.L. Errington, P.J. French, A. Fine, T.V. Bliss, S. Garel, P. Charnay, B. Bozon, S. Laroche, and S. Davis. 2001. A requirement for the immediate early gene Zif268 in the expression of late LTP and long-term memories. *Nat Neurosci.* 4:289-96.
- Jope, R.S., and G.V. Johnson. 2004. The glamour and gloom of glycogen synthase kinase-3. *Trends Biochem Sci.* 29:95-102.
- Jossin, Y., I. Bar, N. Ignatova, F. Tissir, C.L. De Rouvrot, and A.M. Goffinet. 2003a. The reelin signaling pathway: some recent developments. *Cereb Cortex.* 13:627-33.
- Jossin, Y., and A.M. Goffinet. 2001. Reelin does not directly influence axonal growth. *J Neurosci.* 21:RC183.
- Jossin, Y., N. Ignatova, T. Hiesberger, J. Herz, C. Lambert de Rouvrot, and A.M. Goffinet. 2004. The central fragment of Reelin, generated by proteolytic processing in vivo, is critical to its function during cortical plate development. *J Neurosci.* 24:514-21.
- Jossin, Y., M. Ogawa, C. Metin, F. Tissir, and A.M. Goffinet. 2003b. Inhibition of SRC family kinases and non-classical protein kinases C induce a reeler-like malformation of cortical plate development. *J Neurosci.* 23:9953-9.
- Kale, V.P. 2005. MAP kinase: a switch in fate determination of stem cells. *Stem Cells Dev.* 14:248-51.
- Kalil, K., and E.W. Dent. 2005. Touch and go: guidance cues signal to the growth cone cytoskeleton. *Curr Opin Neurobiol.* 15:521-6.
- Kandel, E.R., J.H. Schwartz, and T.M. Jessel. 2000. Principles of neural science.
- Keshvara, L., D. Benhayon, S. Magdaleno, and T. Curran. 2001. Identification of reelin-induced sites of tyrosyl phosphorylation on disabled 1. *J Biol Chem.* 276:16008-14.
- Keshvara, L., S. Magdaleno, D. Benhayon, and T. Curran. 2002. Cyclin-dependent kinase 5 phosphorylates disabled 1 independently of Reelin signaling. *J Neurosci.* 22:4869-77.
- Klemke, R.L., S. Cai, A.L. Giannini, P.J. Gallagher, P. de Lanerolle, and D.A. Cheresh. 1997. Regulation of cell motility by mitogen-activated protein kinase. *J Cell Biol.* 137:481-92.
- Knapska, E., and L. Kaczmarek. 2004. A gene for neuronal plasticity in the mammalian brain: Zif268/Egr-1/NGFI-A/Krox-24/TIS8/ZENK? *Prog Neurobiol.* 74:183-211.
- Ko, J., S. Humbert, R.T. Bronson, S. Takahashi, A.B. Kulkarni, E. Li, and L.H. Tsai. 2001. p35 and p39 are essential for cyclin-dependent kinase 5 function during neurodevelopment. *J Neurosci.* 21:6758-71.
- Kolch, W. 2005. Coordinating ERK/MAPK signalling through scaffolds and inhibitors. *Nat Rev Mol Cell Biol.* 6:827-37.
- Kruger, R.P., J. Aurandt, and K.L. Guan. 2005. Semaphorins command cells to move. *Nat Rev Mol Cell Biol.* 6:789-800.
- Kubo, K., K. Mikoshiba, and K. Nakajima. 2002. Secreted Reelin molecules form homodimers. *Neurosci Res.* 43:381-8.
- Kuo, G., L. Arnaud, P. Kronstad-O'Brien, and J.A. Cooper. 2005. Absence of Fyn and Src causes a reeler-like phenotype. *J Neurosci.* 25:8578-86.
- Kwon, Y.T., and L.H. Tsai. 1998. A novel disruption of cortical development in p35(-/-) mice distinct from reeler. *J Comp Neurol.* 395:510-22.

- Lakso, M., B. Sauer, B. Mosinger, Jr., E.J. Lee, R.W. Manning, S.H. Yu, K.L. Mulder, and H. Westphal. 1992. Targeted oncogene activation by site-specific recombination in transgenic mice. *Proc Natl Acad Sci U S A.* 89:6232-6.
- Lambert de Rouvroit, C., B. Bernier, I. Royaux, V. de Bergeyck, and A.M. Goffinet. 1999a. Evolutionarily conserved, alternative splicing of reelin during brain development. *Exp Neurol.* 156:229-38.
- Lambert de Rouvroit, C., V. de Bergeyck, C. Cortvrindt, I. Bar, Y. Eeckhout, and A.M. Goffinet. 1999b. Reelin, the extracellular matrix protein deficient in reeler mutant mice, is processed by a metalloproteinase. *Exp Neurol.* 156:214-7.
- Larsson, C. 2006. Protein kinase C and the regulation of the actin cytoskeleton. *Cell Signal.* 18:276-84.
- Leuner, B., S. Mendolia-Loffredo, Y. Kozorovitskiy, D. Samburg, E. Gould, and T.J. Shors. 2004. Learning enhances the survival of new neurons beyond the time when the hippocampus is required for memory. *J Neurosci.* 24:7477-81.
- Lew, J., Q.Q. Huang, Z. Qi, R.J. Winkfein, R. Aebersold, T. Hunt, and J.H. Wang. 1994. A brain-specific activator of cyclin-dependent kinase 5. *Nature.* 371:423-6.
- Lewandoski, M. 2001. Conditional control of gene expression in the mouse. *Nat Rev Genet.* 2:743-55.
- Lie, D.C., G. Dziewczapolski, A.R. Willhoite, B.K. Kaspar, C.W. Shults, and F.H. Gage. 2002. The adult substantia nigra contains progenitor cells with neurogenic potential. *J Neurosci.* 22:6639-49.
- Lin, T.P. 1966. Microinjection of mouse eggs. *Science.* 151:333-7.
- Liu, G., H. Beggs, C. Jurgensen, H.T. Park, H. Tang, J. Gorski, K.R. Jones, L.F. Reichardt, J. Wu, and Y. Rao. 2004. Netrin requires focal adhesion kinase and Src family kinases for axon outgrowth and attraction. *Nat Neurosci.* 7:1222-32.
- Lodovichi, C., L. Belluscio, and L.C. Katz. 2003. Functional topography of connections linking mirror-symmetric maps in the mouse olfactory bulb. *Neuron.* 38:265-76.
- Lucas, F.R., R.G. Goold, P.R. Gordon-Weeks, and P.C. Salinas. 1998. Inhibition of GSK-3beta leading to the loss of phosphorylated MAP-1B is an early event in axonal remodelling induced by WNT-7a or lithium. *J Cell Sci.* 111 (Pt 10):1351-61.
- Luo, L., and D. O'Leary D. 2005. Axon retraction and degeneration in development and disease. *Annu Rev Neurosci.* 28:127-56.
- Luskin, M.B., and C.J. Shatz. 1985. Studies of the earliest generated cells of the cat's visual cortex: cogeneration of subplate and marginal zones. *J Neurosci.* 5:1062-75.
- Mack, T.G., M.P. Koester, and G.E. Pollerberg. 2000. The microtubule-associated protein MAP1B is involved in local stabilization of turning growth cones. *Mol Cell Neurosci.* 15:51-65.
- Magdaleno, S., L. Keshvara, and T. Curran. 2002. Rescue of ataxia and preplate splitting by ectopic expression of Reelin in reeler mice. *Neuron.* 33:573-86.
- Mallamaci, A., S. Mercurio, L. Muzio, C. Cecchi, C.L. Pardini, P. Gruss, and E. Boncinelli. 2000. The lack of Emx2 causes impairment of Reelin signaling and defects of neuronal migration in the developing cerebral cortex. *J Neurosci.* 20:1109-18.
- Margolis, B. 1996. The PI/PTB domain: a new protein interaction domain involved in growth factor receptor signaling. *J Lab Clin Med.* 128:235-41.

- Marin, O., and J.L. Rubenstein. 2001. A long, remarkable journey: tangential migration in the telencephalon. *Nat Rev Neurosci.* 2:780-90.
- Marin, O., and J.L. Rubenstein. 2003. Cell migration in the forebrain. *Annu Rev Neurosci.* 26:441-83.
- Martin, S.J., P.D. Grimwood, and R.G. Morris. 2000. Synaptic plasticity and memory: an evaluation of the hypothesis. *Annu Rev Neurosci.* 23:649-711.
- Martinez, A., and E. Soriano. 2005. Functions of ephrin/Eph interactions in the development of the nervous system: emphasis on the hippocampal system. *Brain Res Brain Res Rev.* 49:211-26.
- Martinez, M., A. Calvo-Torrent, and J. Herbert. 2002. Mapping brain response to social stress in rodents with c-fos expression: a review. *Stress.* 5:3-13.
- Matus, A. 2005. Growth of dendritic spines: a continuing story. *Curr Opin Neurobiol.* 15:67-72.
- Mayford, M., M.E. Bach, Y.Y. Huang, L. Wang, R.D. Hawkins, and E.R. Kandel. 1996. Control of memory formation through regulated expression of a CaMKII transgene. *Science.* 274:1678-83.
- Mazzucchelli, C., C. Vantaggiato, A. Ciamei, S. Fasano, P. Pakhotin, W. Krezel, H. Welzl, D.P. Wolfer, G. Pages, O. Valverde, A. Marowsky, A. Porrazzo, P.C. Orban, R. Maldonado, M.U. Ehrengruber, V. Cestari, H.P. Lipp, P.F. Chapman, J. Pouyssegur, and R. Brambilla. 2002. Knockout of ERK1 MAP kinase enhances synaptic plasticity in the striatum and facilitates striatal-mediated learning and memory. *Neuron.* 34:807-20.
- Mellor, H., and P.J. Parker. 1998. The extended protein kinase C superfamily. *Biochem J.* 332 (Pt 2):281-92.
- Miao, G.G., R.J. Smeyne, G. D'Arcangelo, N.G. Copeland, N.A. Jenkins, J.I. Morgan, and T. Curran. 1994. Isolation of an allele of reeler by insertional mutagenesis. *Proc Natl Acad Sci U S A.* 91:11050-4.
- Ming, G.L., and H. Song. 2005. Adult Neurogenesis in the Mammalian Central Nervous System. *Annu Rev Neurosci.* 28:223-50.
- Mitra, S.K., D.A. Hanson, and D.D. Schlaepfer. 2005. Focal adhesion kinase: in command and control of cell motility. *Nat Rev Mol Cell Biol.* 6:56-68.
- Mueller, B.K. 1999. Growth cone guidance: first steps towards a deeper understanding. *Annu Rev Neurosci.* 22:351-88.
- Nadarajah, B., and J.G. Parnavelas. 2002. Modes of neuronal migration in the developing cerebral cortex. *Nat Rev Neurosci.* 3:423-32.
- Nagy, A., M. Gertsenstein, K. Vintersten, and R. Behringer. 2003. Manipulating the mouse embryo.
- Nair, P., S. Muthukumar, S.F. Sells, S.S. Han, V.P. Sukhatme, and V.M. Rangnekar. 1997. Early growth response-1-dependent apoptosis is mediated by p53. *J Biol Chem.* 272:20131-8.
- Nakajima, K., K. Mikoshiba, T. Miyata, C. Kudo, and M. Ogawa. 1997. Disruption of hippocampal development in vivo by CR-50 mAb against reelin. *Proc Natl Acad Sci U S A.* 94:8196-201.
- Nakamoto, T., K.H. Kain, and M.H. Ginsberg. 2004. Neurobiology: New connections between integrins and axon guidance. *Curr Biol.* 14:R121-3.
- Niu, S., A. Renfro, C.C. Quattrochi, M. Sheldon, and G. D'Arcangelo. 2004. Reelin promotes hippocampal dendrite development through the VLDLR/ApoER2-Dab1 pathway. *Neuron.* 41:71-84.

- Ohkubo, N., Y.D. Lee, A. Morishima, T. Terashima, S. Kikkawa, M. Tohyama, M. Sakanaka, J. Tanaka, N. Maeda, M.P. Vitek, and N. Mitsuda. 2003. Apolipoprotein E and Reelin ligands modulate tau phosphorylation through an apolipoprotein E receptor/disabled-1/glycogen synthase kinase-3beta cascade. *Faseb J.* 17:295-7.
- Ohshima, T., and K. Mikoshiba. 2002. Reelin signaling and Cdk5 in the control of neuronal positioning. *Mol Neurobiol.* 26:153-66.
- Ohshima, T., J.M. Ward, C.G. Huh, G. Longenecker, Veeranna, H.C. Pant, R.O. Brady, L.J. Martin, and A.B. Kulkarni. 1996. Targeted disruption of the cyclin-dependent kinase 5 gene results in abnormal corticogenesis, neuronal pathology and perinatal death. *Proc Natl Acad Sci U S A.* 93:11173-8.
- Okuyama-Yamamoto, A., T. Yamamoto, A. Miki, and T. Terashima. 2005. Changes in reelin expression in the mouse olfactory bulb after chemical lesion to the olfactory epithelium. *Eur J Neurosci.* 21:2586-92.
- Ornitz, D.M., R.W. Moreadith, and P. Leder. 1991. Binary system for regulating transgene expression in mice: targeting int-2 gene expression with yeast GAL4/UAS control elements. *Proc Natl Acad Sci U S A.* 88:698-702.
- Palmer, T.D., E.A. Markakis, A.R. Willhoite, F. Safar, and F.H. Gage. 1999. Fibroblast growth factor-2 activates a latent neurogenic program in neural stem cells from diverse regions of the adult CNS. *J Neurosci.* 19:8487-97.
- Pascual, M., P. Perez-Sust, and E. Soriano. 2004a. The GABAergic septohippocampal pathway in control and reeler mice: target specificity and termination onto Reelin-expressing interneurons. *Mol Cell Neurosci.* 25:679-91.
- Pascual, M., E. Pozas, M.J. Barallobre, M. Tessier-Lavigne, and E. Soriano. 2004b. Coordinated functions of Netrin-1 and Class 3 secreted Semaphorins in the guidance of reciprocal septohippocampal connections. *Mol Cell Neurosci.* 26:24-33.
- Paxinos, G., and C. Watson. 1998. The rat brain in stereotaxic coordinates.
- Perron, J.C., and J.L. Bixby. 1999. Distinct neurite outgrowth signaling pathways converge on ERK activation. *Mol Cell Neurosci.* 13:362-78.
- Pesold, C., F. Impagnatiello, M.G. Pisu, D.P. Uzunov, E. Costa, A. Guidotti, and H.J. Caruncho. 1998. Reelin is preferentially expressed in neurons synthesizing gamma-aminobutyric acid in cortex and hippocampus of adult rats. *Proc Natl Acad Sci U S A.* 95:3221-6.
- Podhorna, J., and M. Didriksen. 2004. The heterozygous reeler mouse: behavioural phenotype. *Behav Brain Res.* 153:43-54.
- Pramatarova, A., P.G. Ochalski, K. Chen, A. Gropman, S. Myers, K.T. Min, and B.W. Howell. 2003. Nck beta interacts with tyrosine-phosphorylated disabled 1 and redistributes in Reelin-stimulated neurons. *Mol Cell Biol.* 23:7210-21.
- Qiu, S., K.M. Korwek, A.R. Pratt-Davis, M. Peters, M.Y. Bergman, and E.J. Weeber. 2005. Cognitive disruption and altered hippocampus synaptic function in Reelin haploinsufficient mice. *Neurobiol Learn Mem.*
- Qiu, S., K.M. Korwek, and E.J. Weeber. 2006. A fresh look at an ancient receptor family: Emerging roles for low density lipoprotein receptors in synaptic plasticity and memory formation. *Neurobiol Learn Mem.* 85:16-29.
- Quattrocchi, C.C., F. Wannenes, A.M. Persico, S.A. Ciafre, G. D'Arcangelo, M.G. Farace, and F. Keller. 2002. Reelin is a serine protease of the extracellular matrix. *J Biol Chem.* 277:303-9.

- Qui, M.S., and S.H. Green. 1992. PC12 cell neuronal differentiation is associated with prolonged p21ras activity and consequent prolonged ERK activity. *Neuron*. 9:705-17.
- Rakic, P. 1972. Mode of cell migration to the superficial layers of fetal monkey neocortex. *J Comp Neurol*. 145:61-83.
- Rakic, P. 1974. Neurons in rhesus monkey visual cortex: systematic relation between time of origin and eventual disposition. *Science*. 183:425-7.
- Raper, J.A., M.J. Bastiani, and C.S. Goodman. 1983. Guidance of neuronal growth cones: selective fasciculation in the grasshopper embryo. *Cold Spring Harb Symp Quant Biol*. 48 Pt 2:587-98.
- Reed, R.R. 2004. After the holy grail: establishing a molecular basis for Mammalian olfaction. *Cell*. 116:329-36.
- Ren, X.R., G.L. Ming, Y. Xie, Y. Hong, D.M. Sun, Z.Q. Zhao, Z. Feng, Q. Wang, S. Shim, Z.F. Chen, H.J. Song, L. Mei, and W.C. Xiong. 2004. Focal adhesion kinase in netrin-1 signaling. *Nat Neurosci*. 7:1204-12.
- Rice, D.S., and T. Curran. 2001. Role of the reelin signaling pathway in central nervous system development. *Annu Rev Neurosci*. 24:1005-39.
- Rice, D.S., M. Sheldon, G. D'Arcangelo, K. Nakajima, D. Goldowitz, and T. Curran. 1998. Disabled-1 acts downstream of Reelin in a signaling pathway that controls laminar organization in the mammalian brain. *Development*. 125:3719-29.
- Richter-Levin, G., K.L. Thomas, S.P. Hunt, and T.V. Bliss. 1998. Dissociation between genes activated in long-term potentiation and in spatial learning in the rat. *Neurosci Lett*. 251:41-4.
- Royaux, I., C. Lambert de Rouvroit, G. D'Arcangelo, D. Demirov, and A.M. Goffinet. 1997. Genomic organization of the mouse reelin gene. *Genomics*. 46:240-50.
- Saez-Valero, J., M. Costell, M. Sjogren, N. Andreasen, K. Blennow, and J.M. Luque. 2003. Altered levels of cerebrospinal fluid reelin in frontotemporal dementia and Alzheimer's disease. *J Neurosci Res*. 72:132-6.
- Sakamoto, K.M., C. Bardeleben, K.E. Yates, M.A. Raines, D.W. Golde, and J.C. Gasson. 1991. 5' upstream sequence and genomic structure of the human primary response gene, EGR-1/TIS8. *Oncogene*. 6:867-71.
- Schiffmann, S.N., B. Bernier, and A.M. Goffinet. 1997. Reelin mRNA expression during mouse brain development. *Eur J Neurosci*. 9:1055-71.
- Schmeichel, D.E., and P. Rakic. 1979a. Arrested proliferation of radial glial cells during midgestation in rhesus monkey. *Nature*. 277:303-5.
- Schmeichel, D.E., and P. Rakic. 1979b. A Golgi study of radial glial cells in developing monkey telencephalon: morphogenesis and transformation into astrocytes. *Anat Embryol (Berl)*. 156:115-52.
- Schmid, R.S., R. Jo, S. Shelton, J.A. Kreidberg, and E.S. Anton. 2005. Reelin, integrin and DAB1 interactions during embryonic cerebral cortical development. *Cereb Cortex*. 15:1632-6.
- Schwachtgen, J.L., C.J. Campbell, and M. Braddock. 2000. Full promoter sequence of human early growth response factor-1 (Egr-1): demonstration of a fifth functional serum response element. *DNA Seq*. 10:429-32.
- Schwegler, H., B. Heimrich, F. Keller, P. Renner, and W.E. Crusio. 1988. Strain-specific development of the mossy fiber system in organotypic cultures of the mouse hippocampus. *Neurosci Lett*. 87:7-10.
- Segal, M. 2005. Dendritic spines and long-term plasticity. *Nat Rev Neurosci*. 6:277-84.

- Segal, M., and S. Landis. 1974. Afferents to the hippocampus of the rat studied with the method of retrograde transport of horseradish peroxidase. *Brain Res.* 78:1-15.
- Segal, R.A. 2003. Selectivity in neurotrophin signaling: theme and variations. *Annu Rev Neurosci.* 26:299-330.
- Seger, R., and E.G. Krebs. 1995. The MAPK signaling cascade. *Faseb J.* 9:726-35.
- Senzaki, K., M. Ogawa, and T. Yagi. 1999. Proteins of the CNR family are multiple receptors for Reelin. *Cell.* 99:635-47.
- Serafini, T., S.A. Colamarino, E.D. Leonardo, H. Wang, R. Beddington, W.C. Skarnes, and M. Tessier-Lavigne. 1996. Netrin-1 is required for commissural axon guidance in the developing vertebrate nervous system. *Cell.* 87:1001-14.
- Sgambato, V., C. Pages, M. Rogard, M.J. Besson, and J. Caboche. 1998. Extracellular signal-regulated kinase (ERK) controls immediate early gene induction on corticostriatal stimulation. *J Neurosci.* 18:8814-25.
- Sharma, P., Veeranna, M. Sharma, N.D. Amin, R.K. Sihag, P. Grant, N. Ahn, A.B. Kulkarni, and H.C. Pant. 2002. Phosphorylation of MEK1 by cdk5/p35 down-regulates the mitogen-activated protein kinase pathway. *J Biol Chem.* 277:528-34.
- Shaw, P.E., and J. Saxton. 2003. Ternary complex factors: prime nuclear targets for mitogen-activated protein kinases. *Int J Biochem Cell Biol.* 35:1210-26.
- Sheldon, M., D.S. Rice, G. D'Arcangelo, H. Yoneshima, K. Nakajima, K. Mikoshiba, B.W. Howell, J.A. Cooper, D. Goldowitz, and T. Curran. 1997. Scrambler and yotari disrupt the disabled gene and produce a reeler-like phenotype in mice. *Nature.* 389:730-3.
- Skutella, T., and R. Nitsch. 2001. New molecules for hippocampal development. *Trends Neurosci.* 24:107-13.
- Smalheiser, N.R., E. Costa, A. Guidotti, F. Impagnatiello, J. Auta, P. Lacor, V. Kriho, and G.D. Pappas. 2000. Expression of reelin in adult mammalian blood, liver, pituitary pars intermedia, and adrenal chromaffin cells. *Proc Natl Acad Sci U S A.* 97:1281-6.
- Sng, J.C., H. Taniura, and Y. Yoneda. 2004. A tale of early response genes. *Biol Pharm Bull.* 27:606-12.
- Soderling, T.R., and V.A. Derkach. 2000. Postsynaptic protein phosphorylation and LTP. *Trends Neurosci.* 23:75-80.
- Soler, R.M., X. Dolcet, M. Encinas, J. Egea, J.R. Bayascas, and J.X. Comella. 1999. Receptors of the glial cell line-derived neurotrophic factor family of neurotrophic factors signal cell survival through the phosphatidylinositol 3-kinase pathway in spinal cord motoneurons. *J Neurosci.* 19:9160-9.
- Song, H.J., and M.M. Poo. 1999. Signal transduction underlying growth cone guidance by diffusible factors. *Curr Opin Neurobiol.* 9:355-63.
- Soriano, E., and J.A. Del Rio. 2005. The cells of cajal-retzius: still a mystery one century after. *Neuron.* 46:389-94.
- Stein, E., N.E. Savaskan, O. Ninnemann, R. Nitsch, R. Zhou, and T. Skutella. 1999. A role for the Eph ligand ephrin-A3 in entorhino-hippocampal axon targeting. *J Neurosci.* 19:8885-93.
- Stein, P.L., H. Vogel, and P. Soriano. 1994. Combined deficiencies of Src, Fyn, and Yes tyrosine kinases in mutant mice. *Genes Dev.* 8:1999-2007.

- Steup, A., M. Lohrum, N. Hamscho, N.E. Savaskan, O. Ninnemann, R. Nitsch, H. Fujisawa, A.W. Puschel, and T. Skutella. 2000. Sema3C and netrin-1 differentially affect axon growth in the hippocampal formation. *Mol Cell Neurosci.* 15:141-55.
- Steup, A., O. Ninnemann, N.E. Savaskan, R. Nitsch, A.W. Puschel, and T. Skutella. 1999. Semaphorin D acts as a repulsive factor for entorhinal and hippocampal neurons. *Eur J Neurosci.* 11:729-34.
- Stolt, P.C., Y. Chen, P. Liu, H.H. Bock, S.C. Blacklow, and J. Herz. 2005. Phosphoinositide binding by the disabled-1 PTB domain is necessary for membrane localization and Reelin signal transduction. *J Biol Chem.* 280:9671-7.
- Stolt, P.C., H. Jeon, H.K. Song, J. Herz, M.J. Eck, and S.C. Blacklow. 2003. Origins of peptide selectivity and phosphoinositide binding revealed by structures of disabled-1 PTB domain complexes. *Structure (Camb).* 11:569-79.
- Stolt, P.C., D. Vardar, and S.C. Blacklow. 2004. The dual-function disabled-1 PTB domain exhibits site independence in binding phosphoinositide and peptide ligands. *Biochemistry.* 43:10979-87.
- Stork, P.J. 2005. Directing NGF's actions: it's a Rap. *Nat Cell Biol.* 7:338-9.
- Strasser, V., D. Fasching, C. Hauser, H. Mayer, H.H. Bock, T. Hiesberger, J. Herz, E.J. Weeber, J.D. Sweatt, A. Pramatarova, B. Howell, W.J. Schneider, and J. Nimpf. 2004. Receptor clustering is involved in Reelin signaling. *Mol Cell Biol.* 24:1378-86.
- Strotmann, J., S. Conzelmann, A. Beck, P. Feinstein, H. Breer, and P. Mombaerts. 2000. Local permutations in the glomerular array of the mouse olfactory bulb. *J Neurosci.* 20:6927-38.
- Suetsugu, S., T. Tezuka, T. Morimura, M. Hattori, K. Mikoshiba, T. Yamamoto, and T. Takenawa. 2004. Regulation of actin cytoskeleton by mDab1 through N-WASP and ubiquitination of mDab1. *Biochem J.* 384:1-8.
- Sun, H., C.H. Charles, L.F. Lau, and N.K. Tonks. 1993. MKP-1 (3CH134), an immediate early gene product, is a dual specificity phosphatase that dephosphorylates MAP kinase in vivo. *Cell.* 75:487-93.
- Super, H., A. Martinez, J.A. Del Rio, and E. Soriano. 1998. Involvement of distinct pioneer neurons in the formation of layer-specific connections in the hippocampus. *J Neurosci.* 18:4616-26.
- Super, H., and E. Soriano. 1994. The organization of the embryonic and early postnatal murine hippocampus. II. Development of entorhinal, commissural, and septal connections studied with the lipophilic tracer DiI. *J Comp Neurol.* 344:101-20.
- Super, H., and H.B. Uylings. 2001. The early differentiation of the neocortex: a hypothesis on neocortical evolution. *Cereb Cortex.* 11:1101-9.
- Sweet, H.O., R.T. Bronson, K.R. Johnson, S.A. Cook, and M.T. Davisson. 1996. Scrambler, a new neurological mutation of the mouse with abnormalities of neuronal migration. *Mamm Genome.* 7:798-802.
- Takeda, H., T. Matozaki, T. Takada, T. Noguchi, T. Yamao, M. Tsuda, F. Ochi, K. Fukunaga, K. Inagaki, and M. Kasuga. 1999. PI 3-kinase gamma and protein kinase C-zeta mediate RAS-independent activation of MAP kinase by a Gi protein-coupled receptor. *Embo J.* 18:386-95.
- Tamamaki, N., K. Abe, and Y. Nojyo. 1987. Columnar organization in the subiculum formed by axon branches originating from single CA1 pyramidal neurons in the rat hippocampus. *Brain Res.* 412:156-60.

- Tang, D., J. Yeung, K.Y. Lee, M. Matsushita, H. Matsui, K. Tomizawa, O. Hatake, and J.H. Wang. 1995. An isoform of the neuronal cyclin-dependent kinase 5 (Cdk5) activator. *J Biol Chem.* 270:26897-903.
- Tissir, F., and A.M. Goffinet. 2003. Reelin and brain development. *Nat Rev Neurosci.* 4:496-505.
- Treisman, R. 1995. Journey to the surface of the cell: Fos regulation and the SRE. *Embo J.* 14:4905-13.
- Treisman, R. 1996. Regulation of transcription by MAP kinase cascades. *Curr Opin Cell Biol.* 8:205-15.
- Tremolizzo, L., G. Carboni, W.B. Ruzicka, C.P. Mitchell, I. Sugaya, P. Tueting, R. Sharma, D.R. Grayson, E. Costa, and A. Guidotti. 2002. An epigenetic mouse model for molecular and behavioral neuropathologies related to schizophrenia vulnerability. *Proc Natl Acad Sci U S A.* 99:17095-100.
- Trommsdorff, M., J.P. Borg, B. Margolis, and J. Herz. 1998. Interaction of cytosolic adaptor proteins with neuronal apolipoprotein E receptors and the amyloid precursor protein. *J Biol Chem.* 273:33556-60.
- Trommsdorff, M., M. Gotthardt, T. Hiesberger, J. Shelton, W. Stockinger, J. Nimpf, R.E. Hammer, J.A. Richardson, and J. Herz. 1999. Reeler/Disabled-like disruption of neuronal migration in knockout mice lacking the VLDL receptor and ApoE receptor 2. *Cell.* 97:689-701.
- Tsai, L.H., I. Delalle, V.S. Caviness, Jr., T. Chae, and E. Harlow. 1994. p35 is a neural-specific regulatory subunit of cyclin-dependent kinase 5. *Nature.* 371:419-23.
- Tsai-Morris, C.H., X.M. Cao, and V.P. Sukhatme. 1988. 5' flanking sequence and genomic structure of Egr-1, a murine mitogen inducible zinc finger encoding gene. *Nucleic Acids Res.* 16:8835-46.
- Tsuji, M., O. Inanami, and M. Kuwabara. 2001. Induction of neurite outgrowth in PC12 cells by alpha -phenyl-N-tert-butylnitron through activation of protein kinase C and the Ras-extracellular signal-regulated kinase pathway. *J Biol Chem.* 276:32779-85.
- Tueting, P., E. Costa, Y. Dwivedi, A. Guidotti, F. Impagnatiello, R. Manev, and C. Pesold. 1999. The phenotypic characteristics of heterozygous reeler mouse. *Neuroreport.* 10:1329-34.
- Tuttle, R., and D.D. O'Leary. 1998. Neurotrophins rapidly modulate growth cone response to the axon guidance molecule, collapsin-1. *Mol Cell Neurosci.* 11:1-8.
- Utsunomiya-Tate, N., K. Kubo, S. Tate, M. Kainosho, E. Katayama, K. Nakajima, and K. Mikoshiba. 2000. Reelin molecules assemble together to form a large protein complex, which is inhibited by the function-blocking CR-50 antibody. *Proc Natl Acad Sci U S A.* 97:9729-34.
- van Daal, J.H., P.J. Herbergs, W.E. Crusio, H. Schwegler, B.G. Jenks, W.A. Lemmens, and J.H. van Abeelen. 1991. A genetic-correlational study of hippocampal structural variation and variation in exploratory activities of mice. *Behav Brain Res.* 43:57-64.
- van Groen, T., P. Miettinen, and I. Kadish. 2003. The entorhinal cortex of the mouse: organization of the projection to the hippocampal formation. *Hippocampus.* 13:133-49.
- van Groen, T., and J.M. Wyss. 1990. Extrinsic projections from area CA1 of the rat hippocampus: olfactory, cortical, subcortical, and bilateral hippocampal formation projections. *J Comp Neurol.* 302:515-28.

- van Praag, H., A.F. Schinder, B.R. Christie, N. Toni, T.D. Palmer, and F.H. Gage. 2002. Functional neurogenesis in the adult hippocampus. *Nature*. 415:1030-4.
- Virolle, T., E.D. Adamson, V. Baron, D. Birle, D. Mercola, T. Mustelin, and I. de Belle. 2001. The Egr-1 transcription factor directly activates PTEN during irradiation-induced signalling. *Nat Cell Biol*. 3:1124-8.
- Wada, T., and J.M. Penninger. 2004. Mitogen-activated protein kinases in apoptosis regulation. *Oncogene*. 23:2838-49.
- Waites, C.L., A. Marie Craig, and C.C. Garner. 2005. Mechanisms of Vertebrate Synaptogenesis. *Annu Rev Neurosci*. 28:251-274.
- Wandzioch, E., C.E. Edling, R.H. Palmer, L. Carlsson, and B. Hallberg. 2004. Activation of the MAP kinase pathway by c-Kit is PI-3 kinase dependent in hematopoietic progenitor/stem cell lines. *Blood*. 104:51-7.
- Wang, G.S., C.J. Hong, T.Y. Yen, H.Y. Huang, Y. Ou, T.N. Huang, W.G. Jung, T.Y. Kuo, M. Sheng, T.F. Wang, and Y.P. Hsueh. 2004. Transcriptional modification by a CASK-interacting nucleosome assembly protein. *Neuron*. 42:113-28.
- Wang, H., and M. Tessier-Lavigne. 1999. En passant neurotrophic action of an intermediate axonal target in the developing mammalian CNS. *Nature*. 401:765-9.
- Wang, S., B.W. Scott, and J.M. Wojtowicz. 2000. Heterogenous properties of dentate granule neurons in the adult rat. *J Neurobiol*. 42:248-57.
- Webb, D.J., D.H. Nguyen, and S.L. Gonias. 2000. Extracellular signal-regulated kinase functions in the urokinase receptor-dependent pathway by which neutralization of low density lipoprotein receptor-related protein promotes fibrosarcoma cell migration and matrigel invasion. *J Cell Sci*. 113 (Pt 1):123-34.
- Weeber, E.J., U. Beffert, C. Jones, J.M. Christian, E. Forster, J.D. Sweatt, and J. Herz. 2002. Reelin and ApoE receptors cooperate to enhance hippocampal synaptic plasticity and learning. *J Biol Chem*. 277:39944-52.
- Wellbrock, C., M. Karasarides, and R. Marais. 2004. The RAF proteins take centre stage. *Nat Rev Mol Cell Biol*. 5:875-85.
- Wilson, C., H.J. Bellen, and W.J. Gehring. 1990. Position effects on eukaryotic gene expression. *Annu Rev Cell Biol*. 6:679-714.
- Wilson, S.W., and J.L. Rubenstein. 2000. Induction and dorsoventral patterning of the telencephalon. *Neuron*. 28:641-51.
- Wirths, O., G. Multhaup, C. Czech, V. Blanchard, G. Tremp, L. Pradier, K. Beyreuther, and T.A. Bayer. 2001. Reelin in plaques of beta-amyloid precursor protein and presenilin-1 double-transgenic mice. *Neurosci Lett*. 316:145-8.
- Witter, M.P., H.J. Groenewegen, F.H. Lopes da Silva, and A.H. Lohman. 1989. Functional organization of the extrinsic and intrinsic circuitry of the parahippocampal region. *Prog Neurobiol*. 33:161-253.
- Wyss, J.M., B.B. Stanfield, and W.M. Cowan. 1980. Structural abnormalities in the olfactory bulb of the Reeler mouse. *Brain Res*. 188:566-71.
- Xia, Z., M. Dickens, J. Raingeaud, R.J. Davis, and M.E. Greenberg. 1995. Opposing effects of ERK and JNK-p38 MAP kinases on apoptosis. *Science*. 270:1326-31.
- Xu, M., L. Arnaud, and J.A. Cooper. 2005. Both the phosphoinositide and receptor binding activities of Dab1 are required for Reelin-stimulated Dab1 tyrosine phosphorylation. *Brain Res Mol Brain Res*.
- Yamazaki, M., K. Chiba, T. Mohri, and H. Hatanaka. 2001. Activation of the mitogen-activated protein kinase cascade through nitric oxide synthesis as a mechanism of neuritogenic effect of genipin in PC12h cells. *J Neurochem*. 79:45-54.

- Yang, H., and G.S. Wu. 2004. p53 Transactivates the phosphatase MKP1 through both intronic and exonic p53 responsive elements. *Cancer Biol Ther.* 3:1277-82.
- Yart, A., H. Chap, and P. Raynal. 2002. Phosphoinositide 3-kinases in lysophosphatidic acid signaling: regulation and cross-talk with the Ras/mitogen-activated protein kinase pathway. *Biochim Biophys Acta.* 1582:107-11.
- Yoneshima, H., E. Nagata, M. Matsumoto, M. Yamada, K. Nakajima, T. Miyata, M. Ogawa, and K. Mikoshiba. 1997. A novel neurological mutant mouse, yotari, which exhibits reeler-like phenotype but expresses CR-50 antigen/reelin. *Neurosci Res.* 29:217-23.
- York, R.D., H. Yao, T. Dillon, C.L. Ellig, S.P. Eckert, E.W. McCleskey, and P.J. Stork. 1998. Rap1 mediates sustained MAP kinase activation induced by nerve growth factor. *Nature.* 392:622-6.
- Yun, M., L. Keshvara, C.G. Park, Y.M. Zhang, J.B. Dickerson, J. Zheng, C.O. Rock, T. Curran, and H.W. Park. 2003. Crystal structures of the Dab homology domains of mouse disabled 1 and 2. *J Biol Chem.* 278:36572-81.
- Zarubin, T., and J. Han. 2005. Activation and signaling of the p38 MAP kinase pathway. *Cell Res.* 15:11-8.
- Zhang, W., and H.T. Liu. 2002. MAPK signal pathways in the regulation of cell proliferation in mammalian cells. *Cell Res.* 12:9-18.
- Zhang, X., and S. Firestein. 2002. The olfactory receptor gene superfamily of the mouse. *Nat Neurosci.* 5:124-33.

I també:

Valero, A. 2004. Vocabulari de neurociència.