

## 8 LITERATURVERZEICHNIS

- Acheson A, Lindsay RM (1996): Non target-derived roles of the neurotrophins. *Philos Trans R Soc Lond B Biol Sci* 351(1338):417-22.
- Akaneya Y, Tsumoto T, Kinoshita S, Hatanaka H (1997): Brain-derived neurotrophic factor enhances long-term potentiation in rat visual cortex. *J Neurosci* 17:6707-16.
- Akbarian S, Rios M, Liu RJ, Gold SJ, Fong HF, Zeiler S, Coppola V, Tessarollo L, Jones KR, Nestler EJ, Aghajanian GK, Jaenisch R (2002): Brain-derived neurotrophic factor is essential for opiate-induced plasticity of noradrenergic neurons. *J Neurosci* 22:4153-62.
- Altar CA, Boylan CB, Fritzsche M, Jones BE, Jackson C, Wiegand SJ, Lindsay RM, Hyman C (1994): Efficacy of brain-derived neurotrophic factor and neurotrophin-3 on neurochemical and behavioral deficits associated with partial nigrostriatal dopamine lesions. *J Neurochem* 63:1021-32.
- Altar CA, Cai N, Bliven T, Juhasz M, Conner JM, Acheson AL, Lindsay RM, Wiegand SJ (1997): Anterograde transport of brain-derived neurotrophic factor and its role in the brain. *Nature* 389:856-60.
- Altar CA, DiStefano PS (1998): Neurotrophin trafficking by anterograde transport. *Trends Neurosci* 21:433-7.
- Araque A, Carmignoto G, Haydon PG (2001): Dynamic signaling between astrocytes and neurons. *Annu Rev Physiol* 63:795-813.
- Azmitia EC, Dolan K, Whitaker-Azmitia PM (1990): S-100B but not NGF, EGF, insulin or calmodulin is a CNS serotonergic growth factor. *Brain Res* 516:354-6.
- Azmitia EC (2001): Modern views on an ancient chemical: serotonin effects on cell proliferation, maturation, and apoptosis. *Brain Res Bull* 56:413-24.
- Barbacid M (1995): Structural and functional properties of the TRK family of neurotrophin receptors. *Ann N Y Acad Sci* 766:442-58.
- Barger SW, Wolchok SR, Van Eldik LJ (1992): Disulfide-linked S100 beta dimers and signal transduction. *Biochim Biophys Acta* 1160:105-12.
- Barnes NM, Sharp T (1999): A review of central 5-HT receptors and their function. *Neuropharmacology* 38:1083-152.
- Baudier J, Mochly-Rosen D, Newton A, Lee SH, Koshland DE Jr, Cole RD (1987): Comparison of S100b protein with calmodulin: interactions with melittin and microtubule-associated tau proteins and inhibition of phosphorylation of tau proteins by protein kinase C. *Biochemistry* 26:2886-93.

- Becher A, Drenckhahn A, Pahner I, Margittai M, Jahn R, Ahnert-Hilger G (1999): The synaptophysin-synaptobrevin complex: a hallmark of synaptic vesicle maturation. *J Neurosci* 19:1922-31.
- Bradke F, Dotti CG (2000): Establishment of neuronal polarity: lessons from cultured hippocampal neurons. *Curr Opin Neurobiol* 10:574-81.
- Brewer GJ (1995): Serum-free B27/neurobasal medium supports differentiated growth of neurons from the striatum, substantia nigra, septum, cerebral cortex, cerebellum, and dentate gyrus. *J Neurosci Res* 42:674-683
- Borella A, Bindra M, Whitaker-Azmitia PM (1997): Role of the 5-HT1A receptor in development of the neonatal rat brain: preliminary behavioral studies. *Neuropharmacology* 36:445-50.
- Celada P, Siuciak JA, Tran TM, Altar CA, Tepper JM (1996): Local infusion of brain-derived neurotrophic factor modifies the firing pattern of dorsal raphe serotonergic neurons. *Brain Res* 712:293-8.
- Chopra JS (1991): Neurological consequences of protein and protein-calorie undernutrition. *Crit Rev Neurobiol* 6:99-117.
- Cellerino A, Carroll P, Thoenen H, Barde YA (1997): Reduced Size of Retinal Ganglion Cell Axons and Hypomyelination in Mice Lacking Brain-Derived Neurotrophic Factor. *Mol Cell Neurosci* 9:397-408.
- Chan JR, Cosgaya JM, Wu YJ, Shooter EM (2001): Neurotrophins are key mediators of the myelination program in the peripheral nervous system. *Proc Natl Acad Sci U S A* 98:14661-8.
- Chao MV (1994): The p75 neurotrophin receptor. *J Neurobiol* 25:1373-85.
- Chao MV, Hempstead BL (1995): p75 and Trk: a two-receptor system. *Trends Neurosci* 18:321-6.
- Chao MV, Casaccia-Bonelli P, Carter B, Chittka A, Kong H, Yoon SO (1998): Neurotrophin receptors: mediators of life and death. *Brain Res Brain Res Rev* 26:295-301.
- Cosgaya JM, Chan JR, Shooter EM (2002): The neurotrophin receptor p75NTR as a positive modulator of myelination. *Science* 298:1245-8.
- Craig AM, Banker G (1994): Neuronal polarity. *Annu Rev Neurosci* 17:267-310.
- Crowley C, Spencer SD, Nishimura MC, Chen KS, Pitts-Meek S, Armanini MP, Ling LH, MacMahon SB, Shelton DL, Levinson AD (1994): Mice lacking nerve growth factor display perinatal loss of sensory and sympathetic neurons yet develop basal forebrain cholinergic neurons. *Cell* 76:1001-11.

- Dahlström A, Fuxe K (1964): Evidence for the existence of monoamine-containing neurons in the central nervous system. I. Demonstration of monoamines in the cell bodies of brainstem neurons. *Acta physiol Scand Suppl* 232:1-55
- Das KP, Chao SL, White LD, Haines WT, Harry GJ, Tilson HA, Barone S Jr (2001): Differential patterns of nerve growth factor, brain-derived neurotrophic factor and neurotrophin-3 mRNA and protein levels in developing regions of rat brain. *Neuroscience* 103: 739-61.
- Daval G, Verge D, Becerril A, Gozlan H, Spampinato U, Hamon M (1987): Transient expression of 5-HT1A receptor binding sites in some areas of the rat CNS during postnatal development. *Int J Dev Neurosci* 5:171-80.
- Davies AM, Lee KF, Jaenisch R (1993): p75-deficient trigeminal sensory neurons have an altered response to NGF but not to other neurotrophins. *Neuron* 11(4):565-74.
- Dotti CG, Sullivan CA, Banker GA (1988): The establishment of polarity by hippocampal neurons in culture. *J Neurosci* 8:1454-68.
- Eaton MJ, Staley JK, Globus MY, Whittemore SR (1995): Developmental regulation of early serotonergic neuronal differentiation: the role of brain-derived neurotrophic factor and membrane depolarization. *Dev Biol* 170:169-82.
- Ernfors P, Lee KF, Jaenisch R (1994a): Mice lacking brain-derived neurotrophic factor develop with sensory deficits. *Nature* 368:147-50.
- Ernfors P, Lee KF, Kucera J, Jaenisch R (1994b): Lack of neurotrophin-3 leads to deficiencies in the peripheral nervous system and loss of limb proprioceptive afferents. *Cell* 77:503-12.
- Figurov A, Pozzo-Miller LD, Olafsson P, Wang T, Lu B (1996): Regulation of synaptic responses to high-frequency stimulation and LTP by neurotrophins in the hippocampus. *Nature* 381:706-9.
- Friedman WJ, Ibanez CF, Hallbook F, Persson H, Cain LD, Dreyfus CF, Black IB (1993): Differential actions of neurotrophins in the locus coeruleus and basal forebrain. *Exp Neurol* 119:72-8.
- Frisen J, Verge VM, Cullheim S, Persson H, Fried K, Middlemas DS, Hunter T, Hokfelt T, Risling M (1992): Increased levels of trkB mRNA and trkB protein-like immunoreactivity in the injured rat and cat spinal cord. *Proc Natl Acad Sci U S A* 89:11282-6.
- Frisen J, Verge VM, Fried K, Risling M, Persson H, Trotter J, Hokfelt T, Lindholm D (1993): Characterization of glial trkB receptors: differential response to injury in the central and peripheral nervous systems. *Proc Natl Acad Sci U S A* 90:4971-5.
- Galter D, Unsicker K (1999): Regulation of the transmitter phenotype of rostral and caudal groups of cultured serotonergic raphe neurons. *Neuroscience* 88:549-59.

- Galter D, Unsicker K (2000): Brain-derived neurotrophic factor and trkB are essential for cAMP-mediated induction of the serotonergic neuronal phenotype. *J Neurosci Res* 61:295-301.
- Gras C, Herzog E, Bellenchi GC, Bernard V, Ravassard P, Pohl M, Gasnier B (2002): A third vesicular glutamate transporter expressed by cholinergic and serotoninergic neurons. *J Neurosci* 22:5442-51.
- Greene LA, Kaplan DR (1995): Early events in neurotrophin signalling via Trk and p75 receptors. *Curr Opin Neurobiol* (5):579-87.
- Grosse G, Draguhn A, Hohne L, Tapp R, Veh RW, Ahnert-Hilger G (2000): Expression of Kv1 potassium channels in mouse hippocampal primary cultures: development and activity-dependent regulation. *J Neurosci* 20:1869-82.
- Haring JH, Hagan A, Olson J and Rodgers B (1993): Hippocampal serotonin levels influence the expression of S100 beta detected by immunocytochemistry. *Brain Res* 631:119-123.
- Hellweg R, Hock C, Hartung HD (1989): An improved rapid and highly sensitive enzyme immunoassay for nerve growth factor. *Technique J Methods Cell Mol Biol* 1:43-49
- Hellweg R, Baethge C, Hartung HD, Bruckner MK, Arendt T (1996): NGF level in the rat sciatic nerve is decreased after long-term consumption of ethanol. *Neuroreport* 7:777-80.
- Hellweg R, Thomas H, Arnswald A, von Richthofen S, Kay S, Fink H, Morgenstern R, Hortnagl H (2001): Serotonergic lesion of median raphe nucleus alters nerve growth factor content and vulnerability of cholinergic septohippocampal neurons in rat. *Brain Res* 907:100-8.
- Hempstead BL, Salzer JL (2002): Neurobiology. A glial spin on neurotrophins. *Science* 298:1184-6.
- Henneberger C, Grantyn R and Rothe T (2000): Rapid genotyping of newborn genemutant mice. *J Neurosci Methods* 100:123-6.
- Héry F, Boulenguez P, Semont A, Héry M, Becquet D, Faudon M, Deprez P, Fache MP (1999): Identification and role of serotonin 5-HT1A and 5-HT1B receptors in primary cultures of rat embryonic rostral raphe nucleus neurons. *J Neurochem* 72:1791-801.
- Hesketh J, Baudier J (1986): Evidence that S100 proteins regulate microtubule assembly and stability in rat brain extracts. *Int J Biochem* 18:691-5.
- Hoyer D, Clarke DE, Fozard JR, Hartig PR, Martin GR, Mylecharane EJ, Saxena PR, Humphrey PP (1994): International Union of Pharmacology classification of receptors for 5-hydroxytryptamine (Serotonin). *Pharmacol Rev* 46:157-203.
- Hutton LA, deVellis J, Perez-Polo JR. (1992): Expression of p75NGFR TrkA, and TrkB mRNA in rat C6 glioma and type I astrocyte cultures. *J Neurosci Res* 32:375-83.

- Janakidevi K, Dewey VC, Kidder GW. (1966): Serotonin in protozoa. *Arch Biochem Biophys* 113:758-9.
- Jones KR, Farinas I, Backus C, Reichardt LF (1994): Targeted disruption of the BDNF gene perturbs brain and sensory neuron development but not motor neuron development. *Cell* 76:989-99.
- Kandel, Schwartz, Jessell (1991): Principles of Neuroscience, 3th edition, Prentice-Hall International Inc, USA
- Kang H, Schuman EM. (1995): Long-lasting neurotrophin-induced enhancement of synaptic transmission in the adult hippocampus. *Science* 267:1658-62.
- King VR, Michael GJ, Joshi RK, Priestley JV (1999): trkB, trkC messenger RNA expression by bulbospinal cells of the rat. *Neuroscience* 92:935-44.
- Klein R, Parada LF, Coulier F, Barbacid M (1989): trkB, a novel tyrosine protein kinase receptor expressed during mouse neural development. *EMBO J.* 8(12):3701-9.
- Klein R, Martin-Zanca D, Barbacid M, Parada LF (1990): Expression of the tyrosine kinase receptor gene trkB is confined to the murine embryonic and adult nervous system. *Development* 109(4):845-50.
- Klein R, Smeyne RJ, Wurst W, Long LK, Auerbach BA, Joyner AL, Barbacid M (1993): Targeted disruption of the trkB neurotrophin receptor gene results in nervous system lesions and neonatal death. *Cell* 75:113-22.
- Kligman D, Marshak DR (1985): Purification and characterization of a neurite extension factor from bovine brain. *Proc Natl Acad Sci U S A* 82:7136-9.
- Kuhar MJ, Roth RH, Aghajanian GK (1972): Synaptosomes from forebrains of rats with midbrain raphe lesions: selective reduction of serotonin uptake. *J Pharmacol Exp Ther* 181:36-45.
- Laemmli UK (1970): Cleavage of structural protein during assembly of the head of bacteriophage T4. *Nature* 227:680-685.
- Lauder JM, Krebs H (1978): Serotonin as a differentiation signal in early embryogenesis. *Dev Neurosci* 1:15-30.
- Lauder JM, Wallace JA, Krebs H, Petrusz, McCarthy K (1982): In vivo and in vitro development of serotonergic neurons. *Brain Res Bull* 9:605-25.
- Lauder JM (1990): Ontogeny of the serotonergic system in the rat: serotonin as a developmental signal. *Ann N Y Acad Sci* 600:297-313; discussion 314.
- Lauder JM (1993): Neurotransmitters as growth regulatory signals: role of receptors and second messengers. *Trends Neurosci* 16:233-40.

- Lavdas AA, Blue ME, Lincoln C, Parnavelas JG (1997): Serotonin promotes the differentiation of glutamate neurons in organotypic slice cultures of the developing cerebral cortex. *J Neurosci* 17:7872-80.
- Levine ES, Dreyfus CF, Black IB, Plummer MR (1996): Selective role for trkB neurotrophin receptors in rapid modulation of hippocampal synaptic transmission. *Brain Res Mol Brain Res* 38:300-3.
- Levitt P, Moore RY (1978): Developmental organisation of raphe serotonin neuron groups in the rat. *Anat Embryol* 154:241-251.
- Lindholm D, Harikka J, da Penha Berzaghi M, Castren E, Tzimagiorgis G, Hughes RA, Thoenen H (1994): Fibroblast growth factor-5 promotes differentiation of cultured rat septal cholinergic and raphe serotonergic neurons: comparison with the effects of neurotrophins. *Eur J Neurosci* 6:244-52.
- Liu JP, Lauder JM (1991): Serotonin and nialamide differentially regulate survival and growth of cultured serotonin and catecholamine neurons. *Brain Res Dev Brain Res* 62:297-305.
- Lohof AM, Ip NY, Poo MM (1993): Potentiation of developing neuromuscular synapses by the neurotrophins NT-3 and BDNF. *Nature* 363:350-3.
- Lyons WE, Mamounas LA, Ricaurte GA, Coppola V, Reid SW, Bora SH, Wihler C, Koliatsos VE, Tessarollo L (1999): Brain-derived neurotrophic factor-deficient mice develop aggressiveness and hyperphagia in conjunction with brain serotonergic abnormalities. *Proc Natl Acad Sci U S A* 96:15239-44.
- Madhav TR, Pei Q, Zetterstrom TS (2001): Serotonergic cells of the rat raphe nuclei express mRNA of tyrosine kinase B (trkB), the high-affinity receptor for brain derived neurotrophic factor (BDNF). *Brain Res Mol Brain Res* 93:56-63.
- Maisonpierre PC, Belluscio L, Friedman B, Alderson RF, Wiegand SJ, Furth ME, Lindsay RM, Yancopoulos GD (1990): NT-3, BDNF, and NGF in the developing rat nervous system: parallel as well as reciprocal patterns of expression. *Neuron* 5:501-9.
- Martin-Iverson MT, Todd KG, Altar CA (1994): Brain-derived neurotrophic factor and neurotrophin-3 activate striatal dopamine and serotonin metabolism and related behaviors: interactions with amphetamine. *J Neurosci* 14:1262-70.
- Martin-Zanca D, Barbacid M, Parada LF (1990): Expression of the trk proto-oncogene is restricted to the sensory cranial and spinal ganglia of neural crest origin in mouse development. *Genes Dev* 4:683-94.
- Mazer C, Muneyyirci J, Taheny K, Raio N, Borella A, Whitaker-Azmitia P (1997): Serotonin depletion during synaptogenesis leads to decreased synaptic density and learning deficits in the adult rat: a possible model of neurodevelopmental disorders with cognitive deficits. *Brain Res* 760:68-73.

- Mamounas LA, Blue ME, Siuciak JA, Altar CA (1995): Brain-derived neurotrophic factor promotes the survival and sprouting of serotonergic axons in rat brain. *J Neurosci* 15:7929-39.
- Mamounas LA, Altar CA, Blue ME, Kaplan DR, Tessarollo L, Lyons WE (2000): BDNF promotes the regenerative sprouting, but not survival, of injured serotonergic axons in the adult rat brain. *J Neurosci* 20:771-82.
- McAllister AK, Lo DC, Katz LC (1995): Neurotrophins regulate dendritic growth in developing visual cortex. *Neuron* 15:791-803.
- McAllister AK, Katz LC, Lo DC (1996): Neurotrophin regulation of cortical dendritic growth requires activity. *Neuron* 17:1057-64.
- McTigue DM, Horner PJ, Stokes BT, Gage FH (1998): Neurotrophin-3 and brain-derived neurotrophic factor induce oligodendrocyte proliferation and myelination of regenerating axons in the contused adult rat spinal cord. *J Neurosci* 18:5354-65.
- Merlio JP, Ernfors P, Jaber M, Persson H (1992): Molecular cloning of rat trkB and distribution of cells expressing messenger RNAs for members of the trk family in the rat central nervous system. *Neuroscience* 51:513-32.
- Merlio JP, Ernfors P, Kokaia Z, Middlemas DS, Bengzon J, Kokaia M, Smith ML, Siesjo BK, Hunter T, Lindvall O (1993): Increased production of the TrkB protein tyrosine kinase receptor after brain insults. *Neuron* 10:151-64.
- Merzak A, Koochekpour S, Fillion MP, Fillion G, Pilkington GJ (1996): Expression of serotonin receptors in human fetal astrocytes and glioma cell lines: a possible role in glioma cell proliferation and migration. *Brain Res Mol Brain Res* 41:1-7.
- Meyer M, Matsuoka I, Wetmore C, Olson L, Thoenen H (1992): Enhanced synthesis of brain-derived neurotrophic factor in the lesioned peripheral nerve: different mechanisms are responsible for the regulation of BDNF and NGF mRNA. *J Cell Biol* 119:45-54.
- Nishi M, Poblete JC, Whitaker-Azmitia P, Azmitia EC (1996): Brain derived Neurotrophic Factor and S100 $\beta$ : Trophic Interactions on Cultured Serotonergic Neurons. *Neuroscience-Net* 1; Article #3
- Nishi M, Kawata M, Azmitia EC (2000): Trophic interactions between brain-derived neurotrophic factor and s100beta on cultured serotonergic neurons. *Brain Res* 868:113-8.
- Numan S, Lane-Ladd SB, Zhang L, Lundgren KH, Russell DS, Seroogy KB, Nestler EJ (1998): Differential regulation of neurotrophin and trkB receptor mRNAs in catecholaminergic nuclei during chronic opiate treatment and withdrawal. *J Neurosci* 18:10700-8.
- Olsen L, Seiger A (1972): Early prenatal ontogeny of central monoamine neurons in the rat: Fluorescence histochemical observations. *Z. Anat. Entwickl.-Gesch.* 137:301-316.

- O'Reilly CA, Reith MEA (1988): Uptake of [<sup>3</sup>H]serotonin into plasma membrane vesicles from mouse cerebral cortex. *J Biol Chem* 263:6115-21.
- Parpura V, Haydon PG (2000): Physiological astrocytic calcium levels stimulate glutamate release to modulate adjacent neurons. *Proc Natl Acad Sci U S A* 97:8629-34.
- Page IH (1968): Serotonin. Chicago: Year Book Medical Publishers, Inc.
- Riad M, Emerit MB, Hamon M (1994): Neurotrophic effects of ipsapirone and other 5-HT1A receptor agonists on septal cholinergic neurons in culture. *Brain Res Dev Brain Res* 82:245-58.
- Rios M, Fan G, Fekete C, Kelly J, Bates B, Kuehn R, Lechan RM, Jaenisch R (2001): Conditional deletion of brain-derived neurotrophic factor in the postnatal brain leads to obesity and hyperactivity. *Mol Endocrinol* 15:1748-57.
- Schwartz PM, Borghesani PR, Levy RL, Pomeroy SL, Segal RA (1997): Abnormal cerebellar development and foliation in BDNF<sup>-/-</sup> mice reveals a role for neurotrophins in CNS patterning. *Neuron* 19:269-81.
- Shemer AV, Azmitia EC, Whitaker-Azmitia PM. (1991): Dose-related effects of prenatal 5-methoxytryptamine (5-MT) on development of serotonin terminal density and behavior. *Brain Res Dev Brain Res.* 59(1):59-63.
- Sheu FS, Azmitia EC, Marshak DR, Parker PJ, Routtenberg A (1994): Glial-derived S100b protein selectively inhibits recombinant beta protein kinase C (PKC) phosphorylation of neuron-specific protein F1/GAP43. *Brain Res Mol Brain Res* 21:62-6.
- Sikich L, Hickok JM, Todd RD (1990): 5-HT1A receptors control neurite branching during development. *Brain Res Dev Brain Res* 56:269-74.
- Silverman MA, Kaech S, Jareb M, Burack MA, Vogt L, Sondergiger P, Banker G (2001): Sorting and directed transport of membrane proteins during development of hippocampal neurons in culture. *Proc Natl Acad Sci U S A* 98:7051-7.
- Siuciak JA, Boylan C, Fritzsche M, Altar CA, Lindsay RM (1996): BDNF increases monoaminergic activity in rat brain following intracerebroventricular or intraparenchymal administration. *Brain Res* 710:11-20.
- Sklair-Tavron L, Nestler EJ (1995): Opposing effects of morphine and the neurotrophins, NT-3, NT-4, and BDNF, on locus coeruleus neurons in vitro. *Brain Res* 702:117-25.
- Smith PK, Krohn RI, Hermanson GT, Mallia AK, Gartner FH, Provenzano MD (1985): Measurement of protein using bicinchoninic acid. *Anal Biochem* 150:76-85.
- Snider WD (1994): Functions of the neurotrophins during nervous system development: what the knockouts are teaching us. *Cell* 77:627-38.
- Snider WD, Lichtman JW (1996): Are neurotrophins synaptotrophins? *Mol Cell Neurosci* 7:433-42.

- Sperk G (1982): Simultaneous determination of serotonin, 5-hydroxindoleacetic acid, 3,4-dihydroxyphenylacetic acid and homovanillic acid by high performance liquid chromatography with electrochemical detection. *J Neurochem* 38:840-3.
- Takamori S, Malherbe P, Broger C, Jahn R (2002): Molecular cloning and functional characterization of human vesicular glutamate transporter 3. *EMBO Rep* 3:798-803.
- Thoenen H (1995): Neurotrophins and neuronal plasticity. *Science* 270:593-8.
- Ueda S, Hou XP, Whitaker-Azmitia PM, Azmitia EC (1994): Neuro-glial neurotrophic interaction in the S-100 beta retarded mutant mouse (Polydactyly Nagoya). II. Co-cultures study. *Brain Res* 633:284-8.
- von Bartheld CS, Byers MR, Williams R, Bothwell M (1996): Anterograde transport of neurotrophins and axodendritic transfer in the developing visual system. *Nature* 379:830-3.
- Weskamp G, Reichardt LF (1991): Evidence that biological activity of NGF is mediated through a novel subclass of high affinity receptors. *Neuron* 6:649-63.
- Whitaker-Azmitia PM, Azmitia EC (1986): Autoregulation of fetal serotonergic neuronal development: role of high affinity serotonin receptors. *Neurosci Lett* 67:307-12.
- Whitaker-Azmitia PM, Azmitia EC (1989): Stimulation of astroglial serotonin receptors produces culture media which regulates growth of serotonergic neurons. *Brain Res* 497:80-5.
- Whitaker-Azmitia PM, Murphy R, Azmitia EC (1990): Stimulation of astroglial 5-HT1A receptors releases the serotonergic growth factor, protein S-100, and alters astroglial morphology. *Brain Res* 528:155-8.
- Whitaker-Azmitia PM, Azmitia EC (1994): Astroglial 5-HT1a receptors and S-100 beta in development and plasticity. *Perspect Dev Neurobiol* 2:233-8.
- Wilson CC, Faber KM, Haring JH (1998): Serotonin regulates synaptic connections in the dentate molecular layer of adult rats via 5-HT1a receptors: evidence for a glial mechanism. *Brain Res* 782:235-9.
- Yamuy J, Sampogna S, Chase MH (2000): Neurotrophin-receptor immunoreactive neurons in mesopontine regions involved in the control of behavioral states. *Brain Res* 866:1-14.
- Yan W, Wilson CC, Haring JH. (1997): 5-HT1a receptors mediate the neurotrophic effect of serotonin on developing dentate granule cells. *Brain Res Dev Brain Res* 98:185-90.
- Yuan XB, Jin M, Xu X, Song YQ, Wu CP, Poo MM, Duan S. (2003): Signalling and crosstalk of Rho GTPases in mediating axon guidance. *Nat Cell Biol* 5:38-45.
- Zigmond JM, Bloom FE, Landis SC.(1999): *Fundamental Neuroscience*, Chapter 21: Neurotrophic Factors, pp.611-635, Academic Press.