



REFERENCES

- Abekawa, T., Ohmori, T., and Koyama, T. (1994). Effects of repeated administration of a high dose of methamphetamine on dopamine and glutamate release in rat striatum and nucleus accumbens. **Brain Research**, 643(1-2), 276-181.
- Alexander, G.E., Crutcher, M.D., and DeLong, M.R. (1990). Basal ganglia-thalamocortical circuits: parallel substrates for motor, oculomotor, 'prefrontal' and 'limbic' functions. **Progress in Brain Research**, 85(1), 119-146.
- Amaral, D.G., and Witter, M.P. (1995). The hippocampal formation. In G. Paxinos (Ed.), **The rat nervous system** (2nd ed. p., 443-493). San Diego: Academic Press.
- Anderson, C.M., and Swanson, R.A. (2000). Astrocyte glutamate transport: Review of properties, regulation and physiological functions. **Glia**, 32(1), 1-14.
- Arriza, J.L., Eliasof, S., Kavanaugh, M.P., and Amara, S.G. (1997). Excitatory amino acid transporter 5, a retinal glutamate transporter coupled to a chloride conductance. **The Proceeding of National Academic of Science of the United States of America**, 94(8), 4155-4160.
- Arriza, J.L., Fairman, W.A., Wadiche, J.I., Murdoch, G.H., Kavanaugh, M.P., and Amara, S.G. (1994). Fuctional comparison of three glutamate transporter subtypes cloned from human motor cortex. **Journal of Neuroscience**, 14(9), 5559-5569.
- Asztely, F., and Gustafsson, B. (1996). Ionotropic glutamate receptors: Their role in the expression of hippocampal synaptic plasticity. **Molecular Neurobiology**, 12(1), 1-11.
- Axt, K.J., and Molliver, M.E. (1991). Immunocytochemical evidence for methamphetamine-induced serotonergic axon loss in the rat brain. **Synapse**, 9(4), 302-313.
- Belcher, A.M., O'Dell, S.J., and Marshall, J.F. (2005). Impairs object recognition memory following methamphetamine, but not *p*-chloroamphetamine or *d*-amphetamine-induced neurotoxicity. **Neuropsychopharmacology**, 30(11), 2026-2034.

- Belcher, A.M., O'Dell, S.J., and Marshall, J.F. (2006). A sensitizing regimen of methamphetamine causes impairments in a novelty preference task of recognition. **Behavioural Brain Research**, 170(1), 167-172.
- Benke, D., Wenzel, A., Scheurer, L., Fritschy, J.M., and Modher, H. (1995). Immunobiochemical characterization of the NMDA-receptor subunit NR1 in the developing and adult rat brain. **Journal of Receptor and Signal Transduction Research**, 15(1-4), 393-411.
- Bliss, T.V., and Collingridge, G.L. (1993). A synaptic model of memory: longterm potentiation in the hippocampus. **Nature**, 361(6407), 31-39.
- Bisaga, A., Comer, S.D., Ward, A.S., Popik, P., Kleber, H.D., and Fishchman, M.W. (2001). The NMDA antagonist memantine attenuates the expression of opioid physical dependence in humans. **Psychopharmacology (Berl)**, 157(1), 1-10.
- Bisagno, V., Ferguson, D., and Luine, V.N. (2002). Short toxic methamphetamine schedule impairs object recognition task in male rats. **Brain Research**, 940(1-2), 95-101.
- Bisano, V., Ferguson, D., and Luine, V.N. (2003). Chronic D-amphetamine induces sexually dimorphic effects on locomotion, recognition memory, and brain monoamines. **Pharmacol Biochem Behav**, 74(4), 859-867.
- Boeck, C.R., Kroth, E.H., Bronzatto, M.J., Jardim, F.M., Souza, D.O., and Vendite, D. (2005). Effects of glutamate transporter and receptor ligands on neuronal glutamate uptake. **Neuroscience Research** 53(1), 77-83.
- Bonfoco, E., Kraine, D., Anfarcona, M., Nicotera, P., and Lipton, S.A. (1995). Apoptosis and necrosis: two distinct events induced, respectively, by mild and intense insults with N-methyl-D-aspartate or nitric oxide/superoxide in cortical cell cultures. **The Proceeding of National Academic of Science of the United States of America**, 92(16), 7162-7166.
- Bowyer, J.F., Gough, B., Slikker, W., Lipe, Jr., Newport, G.D., and Holson, R.R. (1993). Effects of a cold environment or age on methamphetamine-induced dopamine release in the caudate putamen of female rats. **Pharmacology Biochemistry Behavior**, 44(1), 87-98.

- Bowyer, J.F., and Schmued, L.C. (2006). Fluoro-Ruby labeling prior to an amphetamine neurotoxic insult shows a definitive massive loss of dopaminergic terminals and axons in the caudate-putamen. *Brain Research*, 1075(1), 236-239.
- Broening, H.W., Pu, C., and Vorhees, C.V. (1997). Methamphetamine selectively damage dopaminergic innervation to the nucleus accumbens core while sparing the shell. *Synapse*, 27(2), 153-163.
- Burrows, K.B., and Meshul, C.K. (1997). Methamphetamine alters presynaptic glutamate immunoreactivity in the caudate nucleus and motor cortex. *Synapse*, 27(2), 133-144.
- Burrows, K.B., Nixdorf, W.L., and Yamamoto, B.K. (2000). Central administration of methamphetamine synergizes with metabolic inhibition to deplete striatal monoamines. *Journal of Pharmacology and Experimental Therapeutics*, 292(1), 853-860.
- Butcher, S.P., Fairbrother, I.S., Kelly, J.S. and Arbuthnott, G.W. (1988). Amphetamine-induced dopamine release in the rat striatum: an in vivo microdialysis study. *Journal of Neurochemistry*, 50(2), 346-355.
- Cadet, J.L., Ordonez, S.V., and Ordonez, J.V. (1997). Methamphetamine induces apoptosis in immortalized neural cells: Protection by the proto-oncogene, bcl-2. *Synapse*, 25(2), 176-184.
- Callahan, B.T., Cord, B.J., and Ricaurte, G.A. (2001). Long-term impairment of anterograde axonal transport along fibers projections originating in the rostral raphe nuclei after treatment with fenfluramine or methylenedioxymethamphetamine. *Synapse*, 40(2), 113-121.
- Campiani, G., Fattorusso, C., De Angelis, M., Catalanotti, B., Butini, S., Fattorusso, R., et al. (2003). Neuronal high-affinity sodium-dependent glutamate transporters (EAATs): Targets for the development of novel therapeutics against neurodegenerative diseases. *Current Pharmaceutical Design*, 9(8), 599-625.
- Cappon, G.D., Pu, C., and Vorhees, C.V. (2000). Time-course of methamphetamine-induced neurotoxicity in rat caudate-putamen after single-dose treatment. *Brain Research*, 863(1-2), 106-111.

- Castellano, C., Cestari, V., and Ciamei, A. (2001). NMDA receptors and learning and memory processes. **Current Drug Targets**, 2(3), 273-283.
- Chapman, D.E., Hanson, G.R., Kesner, R.P., and Keefe, K.A. (2001). Long-term changes in basal ganglia function after a neurotoxic regimen of methamphetamine. **Journal of Pharmacology and Experimental Therapeutics**, 296(2), 520-527.
- Chang, L., Ernst, T., Speak, O., Patel, H., DeSilva, M., Leonido-Yee, M., et al. (2002). Perfusion MRI and computerized cognitive test abnormalities in abstinent methamphetamine users. **Psychiatry Research**, 114(2), 65-79.
- Chantarasak, V. (2000). Patients with amphetamine psychosis admitted at Somdet Chaopraya Hospital. **Journal Psychiatric Association Thailand**, 45(1), 17-31.
- Chaudry, F.A., Lehre, K., Van Lookeren Compagne, M., Ottersen, O.P., Danbolt, N.C., and Strom-Mathisen, J. (1995). Glutamate transporters in glial plasma membranes: Highly differentiated localizations revealed by quantitative ultrastructural immunocytochemistry. **Neuron**, 15(3), 711-720.
- Cho, A.K., and Kumagai, Y. (1994). **Metabolism of amphetamine and other arylisopropylamines in amphetamine and its analogs**. San Diego: Academic Press.
- Choi, D.W. (1988). Calcium-mediated neurotoxicity: relationship to specific channel types and role in ischemic damage. **Trends Neuroscience**, 11(10), 465-469.
- Choi, D.W. (1994). Glutamate receptors and the induction of excitotoxic neuronal death. **Progression Brain Research**, 100, 47-51.
- Choi, D.W., and Rothman, S.M. (1990). The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. **Annual Reviews Neuroscience**, 13, 171-182.
- Churchill, L., Swanson, C.J., Urbina, M., and Kalivas, P.W. (1999). Repeated cocaine alters glutamate receptor subunit levels in the nucleus accumbens and ventral tegmental area of rats that develop behavioral sensitization. **Journal of Neurochemistry**, 72(6), 2397-2403.

- Ciabarra, A.M. and Sevarino, K.A. (1997). An anti-chi-1 antibody recognizes a heavily glycosylated protein in rat brain. **Molecular Brain Research**, 46(1-2), 85-90.
- Clements, J.D., Lester, R.A.J., Tong, G., and Jahr, C.E. (1992). The time course of glutamate in the synaptic cleft. **Science**, 258(5084), 1498-1501.
- Conti, F., DeBiasi, S., Minelli, A., Rothstein, J.D., and Melone, M. (1998). EAAC1, a high-affinity glutamate transporter is localized to astrocytes and gabaergic neurons besides pyramidal cells in the rat cerebral cortex. **Cerebral Cortex**, 8(2), 108-116.
- Crombag, H., Gorny, G., Li, Y., Kolb, B., and Robinson, T.E. (2005). Opposite effects of amphetamine self-administration experience on dendritic spines in the medial and orbital prefrontal cortex. **Cerebral Cortex**, 15(3), 341-348.
- Cubells, J.F., Rayport, S., Rajendran, G., and Sulzer, D. (1994). Methamphetamine neurotoxicity involves vacuolation of endocytic organelles and dopamine-dependent intracellular oxidative stress. **Journal of Neuroscience**, 14(4), 2260- 2271.
- Daikhin, Y., and Yudkoff, M. (2000). Compartmentation of brain glutamate metabolism in neurons and glia. **Journal of Nutrition**, 130(4), 1026-1031.
- Danbolt, N.C. (2001). Glutamate uptake. **Progress in Neurobiology**, 65(1), 1-105.
- Danysz, W., and Parsons, C.G. (1998). Glycine and N-Methyl-D-Aspartate receptors: Physiological significance and possible therapeutic applications. **Pharmacological Reviews**, 50(4), 598-631.
- Del Arco, A., Gonzalez-Mora J.L., Armas, V.R., and Mora, F. (1999). Amphetamine increases the extracellular concentration of glutamate in striatum of the awake rat: involvement of high affinity transporter mechanisms. **Neuropharmacology**, 38(7), 943-954.
- Deng, X., and Cadet, J.L. (2000). Methamphetamine-induced apoptosis is attenuated in the striata of copper-zinc superoxide dismutase transgenic mice. **Molecular Brain Research**, 10(1-2), 121-124.
- Deng, X., Wang, Y., Chou, J., and Cadet, J.L. (2001). Methamphetamine caused widespread apoptosis in the mouse brain: evidence from using an improved TUNEL histochemical method. **Molecular Brain research**, 93(1), 64-69.

- Dingledine, D., Borges, K., Bowie, D., and Traynelis, S.F. (1999). The glutamate receptor ion channels. *Pharmacology Reviews*, 51(1), 7-61.
- Eisch, A.J., Gaffney, M., Weihmuller, F.B., O'Dell, S.J., and Marshall, J.F. (1992). Striatal subregions are differentially vulnerable to the neurotoxic of methamphetamine. *Brain Research*, 598(1-2), 321-326.
- Eisch, A.J., O'Dell, S.J., and Marshall, J.F. (1996). Striatal and cortical NMDA receptors are altered by a neurotoxic regimen of methamphetamine. *Synapse*, 22(3), 217-225.
- Eisch, A.J., Schmued, L.C., and Marschall, J.F. (1998). Characterizing cortical neuron injury with fluoro-jade labeling after a neurotoxic regimen of methamphetamine. *Synapse*, 30(3), 329-333.
- Eskandari, S., Kreman, M., Kavanaugh, M.P., Wright, E.M., and Zampighi, G.A. (2000). Pentameric assembly of a neuronal glutamate transporter. *The Proceeding of National Academic of Science of the United States of America*, 97(15), 8641-8646.
- Fairman, W.A., Vandenberg, R.J., Arriza, J.L., Kavanaugh, M.P., and Amara, S.G. (1995). An excitatory amino transporter with properties of a ligand-gated chloride channel. *Nature (Lond)*, 375(6532), 599-603.
- Farber, N.B., Kim, S.H., Dikranian, K., Jiang, X.P., and Heinkel, C. (2002). Receptor mechanisms and circuitry underlying NMDA antagonist neurotoxicity. *Molecular Psychiatry*, 7(1), 32-34.
- Ferbinteanu, J., Ray, C., and McDonald, R.J. (2003). Both dorsal and ventral hippocampus contribute to spatial learning in Long-Evans rats. *Neuroscience Letters*, 345(2), 131-135.
- Fields, R. (2001). *Drugs in perspective: A personalized look at substance use and abuse* (4th ed.). New York: McGraw-Hill.
- Fiorino, D.F., and Phillips, A.G. (1999a). Facilitation of sexual behavior and enhanced dopamine efflux in the nucleus accumbens of male rats after D-amphetamine-induced behavioral sensitization. *Journal of Neuroscience*, 19(1), 456-463.

- Fiorino, D.F., and Phillips, A.G. (1999b). Facilitation of sexual behavior in male rats following d-amphetamine-induced behavioral sensitization. **Psychopharmacology**, 142(2), 200-208.
- Fleckenstein, A.E., Gibb, J.W., and Hanson, G.R. (2000). Differential effects of stimulants on monoaminergic transporters: Pharmacological consequences and implications for neurotoxicity. **European Journal Pharmacology**, 479(1), 23-40.
- Franklin, S.O., Elliott, K., Zhu, Y.S., Wahlestedt, C., and Inturrisi, C.E. (1993). Quantitation of NMDA receptor (NMDAR1) messenger RNA levels in the adult and developing rat CNS. **Molecular Brain Research**, 19(1-2), 93-100.
- Friedman, S.D., Castaneda, E., and Hodge, G.K. (1998). Long-term monoamine depletion differential recovery, and subtle behavioral impairment following methamphetamine-induced neurotoxicity. **Pharmacology Biochemistry Behavior**, 61(1), 35-44.
- Frost, D.O., and Cadet, J.L. (2000). Effects of methamphetamine-induced neurotoxicity on the development of neuronal circuitry: Hypothesis. **Brain Research Reviews**, 34(3), 103-118.
- Fukumura, M., Cappon, G.D., Pu, C.F., Broening, H.W., and Vorhees, C.V. (1998). (1998). A single dose of methamphetamine-induced neurotoxicity in rats: effects on neostriatal monoamines and glial fibrillary acidic protein. **Brain Research**, 806(1), 1-7.
- Gegelashvili, G., and Schousboe, A. (1997). High affinity glutamate transporters; regulation of expression and activity. **Molecular Pharmacology**, 52(1), 6-15.
- Gegelashvili, G., and Schousboe, A. (1998). Cellular distribution and kinetic properties of high-affinity glutamate receptors. **Brain Research Bulletin**, 45(3), 233-238.
- Gegelashvili, G., Robinson, M.B., Trotti, D., and Rauen, T. (2001). Regulation of glutamate transporters in health and disease. **Progression Brain Research**, 132, 267-286.

- Gegelashvili, M., Rodriguez-kern, A., Pirozhkova, I., Zhang, J., Sung, L., and Gagelashvili, G. (2006). High-affinity glutamate transporter GLAST/EAAT1 regulates cell surface expression of glutamine/neutral amino acid transporter ASCT2 in human fetal astrocytes. *Neurochemistry International*, 48(6-7), 611-615.
- Ghasemzadeh, M.B., Nelson, L.C., Lu, X.Y., and Kalivas, P.W. (1999). Neuroadaptations in ionotropic and metabotropic glutamate receptor mRNA produced by cocaine treatment. *Journal of Neurochemistry*, 72(1), 157-65.
- Ghijzen, W.E., SilvaArresta Belo, A.I., Zuiderwijk, M., and Lopez da Silva, F.H. (1999). Compensatory change in EAAC1 glutamate transporter in rat hippocampus CA1 region during kindling epileptogenesis. *Neuroscience Letters*, 276(3), 157-160.
- Ghodse, H. (2002). *Drugs and addictive behaviour* (3rd ed.). The United Kingdom: Cambridge University Press.
- Gibb, J.W., and Hotchkiss, A.J. (1980). Long-Term effects of multiple doses of methamphetamine on tryptophan hydroxylase and tyrosine hydroxylase activity in rat brain. *Journal of Pharmacology and Experimental Therapeutics*, 214(2), 257-162.
- Gorelova, N., and Yang, C. R. (1997). The course of neural projection from the prefrontal cortex to the nucleus accumbens in the rat. *Neuroscience*, 76(3), 689-706.
- Grant, E.R., Bacskai, B.J., Pleasure, D.E., Pritchett, D.B., Gallagher, M.J., Kendrick, S.J., et al., (1997). N-methyl-D-aspartate receptor expressed in a nonneuronal cell line mediate subunit-specific increase in free intracellular calcium. *Journal of Biological Chemistry*, 272(1), 647-56.
- Grilly, D.M. (2002). *Drugs and human behavior* (4th ed.). The United States of America: Pearson Education.
- Grimwood, S., Gilbert, E., Ragan, C.I., and Hutson, P.H. (1996). Modulation of ⁴⁵Ca²⁺ influx into cells stable expressing recombinant human NMDA receptors by ligand acting at distinct recognition sites. *Journal of Neurochemistry*, 66(6), 2589-2595.

- Guilarte, T.R., Nihei, J.L., McGlothan, J.L., and Howard, A.S. (2003). Methamphetamine-induced deficits of brain monoaminergic neuronal markers: distal axotomy or neuronal plasticity. *Neuroscience*, 122(2), 499-513.
- Hinoi, E., Takarada, T., Ueshima, T., Tsuchihashi, Y., and Yoneda, Y. (2004). Glutamate signaling in peripheral tissues. *European Journal of Biochemistry*, 271, 1-13.
- Hartley, D.M., Kurth, M.C., Bjerkness, L., Weiss, J.H., and Choi, D.W. (1993). Glutamate receptor induced $^{45}\text{Ca}^{2+}$ accumulation in cortical cell culture correlates with subsequent neuronal degeneration. *Journal of Neuroscience*, 13(5), 1993-2000.
- Hayase, T., Yamamoto, Y., and Yamamoto, K. (2003). Brain excitatory amino acid transporters (EAATs) and treatment of methamphetamine toxicity. *Nihon Arukoru Yakubutsu Igakkai Zasshi*, 38(6), 498-511.
- Hemby, S.E., Horman, B., and Tang, W. (2005). Differential regulation of ionotropic glutamate receptor subunits following cocaine self-administration. *Brain Research*, 1064(1-2), 75-82.
- Hirata, H., and Cadet, J.L. (1997). p53-knockout mice are protected against the long-term effects of methamphetamine on dopaminergic terminals and cell bodies. *Journal of Neurochemistry*, 69(2), 780-790.
- Hollmann, M., Maron, C., and Heinmann, S. (1994). N-glycosylation site tagging suggests a three-transmembrane domain topology for the glutamate receptor GluR1. *Neuron*, 13(6), 1331-143.
- Howell, L.L., and Kimmel, H.L. (2008). Monoamine transporters and psychostimulant addiction. *Biochemical Pharmacology*, 75(1), 196-217.
- Hu, X.J., and Ticku, M.K. (1995). Chronic ethanol treatment upregulates the NMDA receptor function and binding in mammalian cortical neurons. *Brain Research Molecular Brain Research*, 30(2), 347-356.
- Hyre, K., Handran, S.D., Rothman, S.M., and Goldberg, M.P. (1997). Ionized intracellular calcium concentration predicts excitotoxic neuronal death: observations with low-affinity fluorescent calcium indicators. *Journal of Neuroscience*, 17(17), 6669-6677.

- Itzhak, Y., Martin, J., and Ali, S. (2002). Methamphetamine-induced dopaminergic neurotoxicity in mice: long-lasting sensitization to the locomotor stimulation and desensitization to the rewarding effects of methamphetamine. **Progress in Neuropsychopharmacology and Biological Psychiatry**, 26 (6), 1177-1183.
- Jay, T.M., and Witter, M.P. (1991). Distribution of hippocampal CA1 and Subicular efferents in the prefrontal cortex of the rat studies by means of anterograde transport of Phaseolus vulgaris-leucoagglutinin. **Journal of Comparative Neurology**, 313(4), 574-568.
- Jay, T.M., Burette, F., and Laroche, S. (1996). Plasticity of the hippocampal-prefrontal cortex synapses. **Journal of Physiology (Paris)**, 90(5-6), 361-366.
- Johnson, M., Stone, D.M., and Hanson, G.R. (1987). Role of the dopaminergic nigrostriatal pathway in methamphetamine-induced depression of the neostriatal serotonergic system. **European Journal of Pharmacology (Amsterdam)**, 135(2), 231-234.
- Kalechstein, A.D., Newton, T.F., and Green, M. (2003). Methamphetamine dependence is associated with neurocognitive impairment in the initial phases of abstinence. **Journal of Neuropsychiatry and Clinical Neurosciences**, 15(2), 215-220.
- Kamei, H., Nagai, T., Nakano, H., Togan, Y., Takayanagi, M., Takahashi, K., et al., (2005). Repeated methamphetamine treatment impairs recognition memory through a failure of novelty-induced ERK1/2 activation in the prefrontal cortex of mice. **Society of Biological Psychiatry**, 59(1), 75-84.
- Kanai, Y., and Hediger, M.A. (1992). Primary structure and functional characterization of a high-affinity glutamate transporter. **Nature (Lond)**, 360, 467-471.
- Kelley, A. (2004). Memory and addiction: Shared neuronal circuitry and molecular mechanisms. **Neuron**, 44(1), 161-179.
- Kim, J.S., Kornhuber, H.H., Brand, U., and Menge, H.G. (1981). Effects of chronic amphetamine treatment on the glutamate concentration in cerebrospinal fluid and brain: implications for a theory of schizophrenia. **Neuroscience Letters**, 24(1), 93-96.

- Konradi, C., Leveque, J.C., and Hyman, S.E. (1991). Amphetamine and dopamine-induced immediate early gene expression in striatal neuron depends on postsynaptic NMDAR receptors and calcium. *Journal of Neuroscience*, 16, 4231-4239.
- Koob, G.E., and Le Moal, M. (2001). Drug addiction, dysregulation of reward, and allostasis. *Neuropsychopharmacology*, 24(2), 97-129.
- Kopec, C., Li, B., Wei, W., Boehm, J., and Malinow, R. (2006). Glutamate receptor exocytosis and spine enlargement during chemically induced long-term potentiation. *Journal of Neuroscience*, 26(7), 2000-2009.
- Krystal, J.H., Petrakis, I.L., Limoncelli, D., Webb, E., Gueorgueva, R., and D'Souza, D.C. (2003a). Altered NMDA glutamate receptor antagonist response in recovering ethanol-dependent patients. *Neuropsychopharmacology*, 28(11), 2020-2028.
- Krystal, J.H., Petrakis, I.L., Mason, G., Trevisan, L., and D'Souza, D.C. (2003b). N-methyl-D-aspartate glutamate receptors and alcoholism: reward, dependence, treatment, and vulnerability. *Pharmacology and Therapeutics*, 99(1), 79-94.
- Lafon Cazal, M., Culcassi, M., Gaven, F., and Pietri, S. (1993). Nitric oxide, superoxide and peroxynitrite: putative mediators of NMDA-induced cell death in cerebellar granule cells. *Neuropharmacology*, 32(11), 1259-1266.
- Lancelot, E., Lecanu, L., Revaud, M.L., Boulu, R.G., Plotkine, M., and Callebert, J. (1998). A microdialysis study investigating the mechanism of hydroxyl radical formation in rat striatum exposed to glutamate. *Brain Research*, 809(2), 294-296.
- Leyton, M. (2007). Conditioned and sensitized response to stimulant drugs in human. *Progress in Neuropsychopharmacology and Biological Psychiatry*, 31(8), 1601-1613.
- Liang, N.Y., and Rutledge, C.O. (1982). Evidence for carrier-mediated efflux of dopamine from corpus striatum. *Biochemical Pharmacology*, 31(15), 2479-2484.

- London, E.D., Ernst, M., Grant, S., Bonson, K., and Weinstein, A. (2000). Orbitofrontal cortex and human drug abuse: functional imaging. *Cerebral Cortex*, 10(3), 334-342.
- Longuemare, M.C., and Swanson, R.A. (1995). Excitatory amino acid release from astrocytes during energy failure by reversal of sodium-dependent uptake. *Journal of Neuroscience Research*, 40(3), 379-386.
- Lowy, M. (1994). Adrenalectomy attenuates kainic acid-induced spectrin proteolysis and heat shock protein 70 induction in hippocampus and cortex. *Journal of neurochemistry*, 63(3), 886-894.
- Lu, W., Chen, M.E., and Wolf, M.E. (1997). Repeated amphetamine administration alters the expression of mRNA for AMPA receptor subunits in rats nucleus accumbens and prefrontal cortex. *Synapse*, 26(3), 269-280.
- Lu, W., and Wolf, M.E. (1999). Repeated amphetamine administration alters AMPA receptor subunit expression in rat nucleus accumbens and medial prefrontal cortex. *Synapse*, 32(2), 119-131.
- Lu, W., Monteggia, L.M., and Wolf, M.E. (1999). Withdrawal from repeated amphetamine administration reduced NMDAR1 expression in the rat substantia nigra, nucleus accumbens and medial prefrontal cortex. *European Journal of Neuroscience*, 11(9), 3167-3177.
- Malenka, R.C., and Bear, M.F. (2004). LTP and LTD: an embarrassment of riches. *Neuron*, 44(1), 5-21.
- Malenka, R.C., and Nicoll, R.A. (1999). Long-term potentiation—a decade of progress? *Science*, 285(5435), 1870-1874.
- Malinow, R., and Malenka, R.C. (2002). AMPA receptor trafficking and synaptic plasticity. *Annual Review of Neuroscience*, 25, 103-126.
- Mao, L., and Wang, J.Q. (2001). Differentially altered mGluR1 and mGluR5 mRNA expression in rat caudate nucleus and nucleus accumbens in the development and expression of administration of behavioral sensitization to repeated amphetamine. *Synapse*, 41(3), 230-240.
- Maren, S., and Baudry, M. (1995). Properties and mechanisms of long-term synaptic plasticity in the mammalian brain: relationships to learning and memory. *Neurobiology of Learning and Memory*, 63(1), 1-18.

- Mark, K.A., Quinton, M.S., Russek, S.J., and Yamamoto, B.K. (2007). Dynamic changes in vesicular glutamate transporter 1 function and expression related to methamphetamine-induced glutamate release. *Journal of Neuroscience*, 27(25), 6823-6831.
- Mark, K.A., Soghomonian, J.J., and Yamaoto, B.K. (2004). High-dose methamphetamine acutely activates the striatonigral pathway to increase striatal glutamate and mediate long-term dopamine toxicity. *Journal of Neuroscience*, 24(50), 11449-11456.
- Marshall JF, O'Dell SJ, and Weihmuller, F.B. (1993). Dopamine-glutamate interactions in methamphetamine-induced neurotoxicity. *Journal of Neural Transmission. General Section*, 91(2-3), 241-254.
- Masson, J., Sagne, C., Hamon, M., and El Mestikawy, S. (1999). Neurotransmitter transporters in the central nervous system. *Pharmacological Reviews*, 51(3), 439-459.
- Mathern, GW., Mendoza, D., Lozada, A., Pretorius, J.K., Dehnes, Y., Danbolt, N.C., et al. (1999). Hippocampal GABA and glutamate transporter immunoreactivity in patients with temporal lobe epilepsy. *Neurology*, 52(3), 453-472.
- McBain, C.J. and Mayer, M.L. (1994). N-Methyl-D-aspartic acid receptor structure and function. *Physiological Reviews*, 74(3), 723-760.
- McCann, U.D., and Ricaurte, G.A. (2004). Amphetamine neurotoxicity: Accomplishments and remaining challenges. *Neuroscience and Biobehavioral Reviews*, 27(8), 812-826.
- McCann, U.D., Wong, D.F., Yokoi, F., Villemagne, V., Dannals, R.F., Ricaurte, G.A. (1998). Reduced striatal dopamine transporter density in abstinent methamphetamine and methcathinone users: evidence from positron emission tomography studies with [11C]-WIN35. *Journal of Neuroscience*, 18(20), 8417-8422.
- McConkey, D.J., Zhiyotovskiy, B., and Orrenius. (1996). Apoptosis-Molecular mechanism and biomedical implications. *Molecular Aspects of Medicine*, 17(1), 1-110.

- McCullumsmith, R.E., and Meador-Woodruff, J.H. (2002). Striatal excitatory amino acid transporter transcript expression in schizophrenia, bipolar disorder, and major depressive disorder. *Neuropsychopharmacology*, 26(3), 368-375.
- McEntee, W.J., and Crook, T.H. (1993). Glutamate: its role in learning, memory, and the aging brain. *Psychopharmacology*, 111(4), 391-401.
- Meldrum, B.S. (2000). Glutamate as a Neurotransmitter in the Brain: Review of Physiology and Pathology. *Journal of Nutrition*, 130, 1007-1015.
- Mendelson, J., Uemura, N., Harris, D., Nath, R.P., Fernandez, E., Jacob, P., et al. (2006). Pharmacokinetics and drug disposition. *Clinical Pharmacology and Therapeutics*, 80, 403-420.
- Mennerick, S. and Zorumski, C.F. (1994). Glial contributions to excitatory neurotransmission in cultured hippocampal cells. *Nature*, 368(6466), 59-62.
- Meyer, J.S., and Quenzer, L.F. (2005). *Psychopharmacology: Drugs, the Brain, and Behavior*. USA: Sinauer Associates.
- Miller, N.S., and Gold, M.S. (1995). *Pharmacological therapies for drugs & alcohol addictions*. New York: Marcel Dekker.
- Miller, H.P., Levey, A.I., Rothstein, J.D., Tzingounis, A.V., and Conn, P.J. (1997). Alterations in glutamate transporter protein levels in kindling-induced epilepsy. *Journal of Neurochemistry*, 68(4), 1564-1570.
- Miyamoto, Y., Yamada, K., Nagai, T., Mishina, M., Furukawa, H., and Noda, Y. (2004). Behavioral adaptations to addictive drugs in mice lacking The NMDA receptor epsilon1 subunit. *European Journal of Neuroscience*, 19(1), 151-158.
- Monyer, H., Sprengel, R., Schoepfer, R., Herb, A., Higuchi, M., and Lomeli, H. (1992). Heteromeric NMDA receptors: Molecular and functional distinction of subtypes. *Science (Wash. DC)*, 256(5060), 1217-1221.
- Moore, K.E. (1977). The actions of amphetamine on neurotransmitters: a brief review. *Biological Psychology*, 12(3), 451-462.
- Mori, A., Okuyama, K., Horie, M., Taniguchi, Y., Wadatsu, T., Nishino, N., et al., (2002). Alteration of methamphetamine-induced striatal dopamine release in mint-1 knockout mice. *Neuroscience Research*, 43(3), 251-257.

- Morris, R.G.M., Anderson, E., Lynch, G.S., and Baudry, M. (1986). Selective impairment of learning and blockade of long-term potentiation by an N-methyl-D-aspartate antagonist, AP5. *Nature*, 319(6056), 774-776.
- Moser, M.B., Moser, E.I., Forrest, E., Andersen, P., and Morris, R.G.M. (1995). Spatial learning with a minislab in hippocampus. *Proceedings of the National Academy of Sciences of the United States of America*, 92(21), 9697-9701.
- Nash, J.F., and Yamamoto, B.K. (1992). Methamphetamine neurotoxicity and striatal glutamate release: comparison to 3,4-methylenedioxymethamphetamine. *Brain Research*, 581(2), 237-243.
- Nagomoto, K.N., Ueda, Y., Doi, T., and Nakajima, A. (2007). An acute of the glutamate transporter activity has been shown to generate free radicals and suppress the anti-oxidant ability in the hippocampus of rats. *Neuroscience Research*, 57(3), 477-480.
- Nagy, J., Horvath, C., Farkas, S., Kolok, S., and Szombathelyi, Z. (2004). NR2B subunit selective NMDA antagonists inhibit neurotoxic effect of alcohol-withdrawal in primary cultures of rat cortical neurons. *Neurochemistry International*, 44(1), 17-23.
- Naoaki, S., Vladimir, D., and Roderick, C. (2004). NARG2 encodes a novel nuclear protein with (S/T)PXX motifs that is expressed during development. *European Journal of Biochemistry*, 271, 23-24.
- Nestler, E.J., Hyman, S.E., and Malenka, R.C. (2001). *Molecular neuropharmacology: A foundation for clinical neuroscience* (4th ed.). The United States of America: McGraw-Hill.
- Nicholls, D.G. (1993). The glutamatergic nerve terminal. *European Journal of Biochemistry*, 212(3), 613-631.
- Niesink, R.J.M. (1999). *Drug of abuse and addiction: Neurobehavioral toxicology* (p.112). USA: CRE Press.
- Nishi, M., Hinds, H., Lu, H.P., Kawata, M., Hayashi, Y. (2001). Motoneuron-specific expression of NR3B, a novel NMDA-type glutamate receptor subunit that works in a dominant-negative manner. *Journal of Neuroscience*, 21(23), RC185.

- Nishiku, T., Shimazoe, T., Yamamoto, Y., Nakanishi, H., and Watanabe, S. (1999). Expression of long-term potentiation of the striatum in the methamphetamine-sensitized rats. *Neuroscience Letters*, 268(2), 81-84.
- Nordahl, T.E., Salo, R., and Leamon, M. (2003). Neuropsychological effects of chronic methamphetamine use in neurotransmitters and cognition: A review. *Journal of Neuropsychiatry and Clinical Neurosciences*, 15(3), 317-325.
- Nudmamud-Thanoi, S. and Reynolds, G.P. (2004). The NR1 subunit of glutamate/NMDA receptor in the superior temporal cortex in schizophrenia and affective disorders. *Neuroscience Letters*, 372(1-2), 173-177.
- Office of the Narcotics Control Board of Thailand. (2002). *Thailand Narcotics Annual Report*. Bangkok: Office of the Narcotics Control Board of Thailand.
- O'Dell, S.J., Weihmuller, F.B., and Marshall, J.F. (1991). Multiple methamphetamine injections induce marked increases in extracellular striatal dopamine which correlates with subsequent neurotoxicity. *Brain Research*, 564(2), 256-260.
- O'Mara, S. (2006). Controlling hippocampal output: The central role of subiculum in hippocampal information processing. *Behavioural Brain Research*, 174(2), 304-312.
- Olney, J.W., Newcomer, J.W., and Farber, N.B. (1999). NMDA receptor hypofunction model of schizophrenia. *Journal of Psychosomatic Research*, 33(6), 532-533.
- Olson, K.R. (2004). *Poisoning & Drug Overdose*. (4th ed). San Francisco: McGraw-Hill.
- Otis, T.S., Kavanaugh, M.P., and Jahr, C.E. (1997). Postsynaptic glutamate transporter at the climbing fiber-Purkinje cell synapse. *Science*, 277(5331), 1515-1518.
- Pagliaro, L.A., and Pagliaro, A.M. (2004). *Pagliaros' comprehensive guide to drugs and substances of abuse*. Washington, DC: American Pharmacists Association.
- Palacin, M., Estevez, R., Bertran, J., and Zorzano, A. (1998). Molecular biology of mammalian plasma membrane amino acid transporters. *Physiological Reviews*, 78(4), 969-1054.

- Paulus, M.P., Hozack, N.E., Zauscher, B.E., Frank, L., Brown, G.G., and Braff, D.L. (2002). Behavioral and function neuroimaging evidence for prefrontal dysfunction in methamphetamine-dependent subjects. *Neuropsychopharmacology*, 26(1), 53-63.
- Perez-Otano, I., and Ehlers, M.D. (2005). Homeostatic plasticity and NMDA receptor trafficking. *Trends in Neuroscience*, 28(5), 229-238.
- Phillips, A.G., and Fiorino, D.F. (1999). Facilitation of sexual behavior and enhanced dopamine efflux in the nucleus accumbens of male rats after D-amphetamine-induced behavioral sensitization. *Journal of Neuroscience*, 19(1), 456-463.
- Pines, G., Danbolt, N.C., Bjonas, M., Zhang, Y., Bendahan, A., Eide, L., et al., (1992). Cloning and expression of a rat L-glutamate transporter. *Nature (Lond)*, 360, 464-467.
- Pizzi, G., Brunelli, S., and Barlati, P. (2006). Glutamate innervation of rat skeletal muscle by supraspinal neurons: a new paradigm in spinal cord injury repair. *Current Opinion in Neurobiology*, 6(3), 323-328.
- Poldrack, R.A., and Rodriguez, P. (2004). How do memory systems interact? Evidence from human classification learning. *Neurobiology of Learning and Memory*, 82(3), 324-332.
- Raudensky, J., and Yamamoto, B.K. (2007). Effects of chronic unpredictable stress and methamphetamine on hippocampal glutamate function. *Brain Research*, 1135, 129-135.
- Reid, A., and Hughes, A.L. (2006). Neuropharmacology of addiction. *Psychiatry*, 12(5), 449-454.
- Reynolds, D.S., Carter, R.J., and Morton, A.J. (1998). Dopamine modulates the susceptibility of striatal neurons to 3-Nitropropionic acid in the rat model of Huntington's disease. *Journal of Neuroscience*, 18(23), 10116-10127.
- Riedel, G., Platt, B., and Micheau, J. (2003). Glutamate receptor function in learning and memory. *Behavioral Brain Research*, 140(1), 1-47.
- Robinson, R.A., and Becker, J.B. (1986). Enduring changes in brain and behavior produced by chronic amphetamine administration: A review and evaluation of animal models of amphetamine psychosis. *Brain Research Reviews*, 396(2), 157-198.

- Robinson, T.E., Castaneda, E., Whishaw, I.Q. (1990a). Compensatory changes in striatal dopamine neurons following recovery from injury induced by 6-OHDA or methamphetamine: A review of microdialysis studies. *Canadian Journal of Psychology*, 44(2), 253-275.
- Robinson, T.E., Yew, J., Paulson, P.E., and Camp, D.M. (1990b). The long-term effects of neurotoxic doses of methamphetamine on the extracellular concentration of dopamine measured with microdialysis in striatum. *Neuroscience Letters*, 110(1-2), 193-198.
- Robinson, T.E., and Kolb, B. (2004). Structural plasticity associated with exposure to drugs of abuse. *Neuropharmacology*, 47(1), 33-46.
- Rocher, C., and Gardier, A.M. (2001). Effects of repeated systemic administration of d-Fenfluramine on serotonin and glutamate release in rat ventral hippocampus: comparison with methamphetamine using in vivo microdialysis. *Naunyn-Schmiedeberg's Archives of Pharmacology*, 363(4), 422-428.
- Rothman, S.M., and Olney, J.W. (1987). Excitotoxicity and the NMDA receptor. *Trends in Neurosciences*, 10(7), 299-301.
- Rothman, R.B., and Beaumann, M.H. (2003). Monoamine transporters and psychostimulant drugs. *European Journal of Pharmacology*, 479(1), 23-40.
- Rothstein, J.D., Martin, L., Levey, A.I., Dykes-Hoberg, M., Jin, L., Wu, D., et al. (1994). Localization of neuronal and glial glutamate transporters. *Neuron* 13(3), 713-25.
- Rothstein, J.D., Dykes-Hoberg, C.A., Pardo, L.A., Bristol, L.A., Jin, L., Kuncl, Y., et al. (1996). Knockout of glutamate transporters reveals a major role for astroglial transport in excitotoxicity and clearance of glutamate. *Neuron*, 16(3), 675-686.
- Rudnick, G., and Clark, J. (1993). From synapse to vesicle: the reuptake and storage of biogenic amine neurotransmitters. *Biochimica et Biophysica Acta*, 1144(3), 249-263.
- Rudnick, G. (1997). Mechanisms of biogenic amine transporters. In M. Reith (Ed.), *Neurotransmitter transporters: structure, function, and regulation* (p.73-100). Totowa: Humana Press.

- Ryan, L.J., Jean, C., Linder, Martone, M.E., and Groves, P.M. (1990). Histological and ultrastructural evidence that D-amphetamine causes degeneration in the neostriatum and frontal cortex of rats. **Brain Research**, 518(1-2), 67-77.
- Saal, D., and Malenka, R.C. (2005). The role of synapticity in addiction. **Clinical Neuroscience Research**, 5, 141-146.
- Schmitt, A., Asan, E., Puschel, B., and Kugler, P. (1997). Cellular and regional distribution of the glutamate transporter GLAST in the CNS: Nonradioactive in situ hybridization and comparative immunocytochemistry. **Journal of Neuroscience**, 17(1), 1-10.
- Schmued, L.C., and Bowyer, J.F., (1997). Methamphetamine exposure can produce neuronal degeneration in mouse hippocampal remnants. **Brain Research**, 759(1), 135-140.
- Schulz, J.B., Matthews, R.T., Muqit, M. M. K., Browne, S.E., and Beal, M.F. (1995) Inhibition of Neuronal Nitric Oxide Synthase by 7-Nitroindazole Protects Against MPTP-Induced Neurotoxicity in Mice. **Journal of Neurochemistry**, 64 (2), 936-939
- Segal, D.S., and Kuczenski, R. (1997a). An escalating dose "Binge" model of amphetamine psychosis: Behavioral and neurochemical characteristics. **Journal of Neuroscience**, 17(7), 2551-2566.
- Segal, D.S., and Kuczenski, R. (1997b). Repeated binge exposures to amphetamine and methamphetamine: Behavioral and neurochemical characteristics. **Journal of Neuroscience**, 282(2), 561-573.
- Sekine, Y. Iyo, M., Ouchi, Y., Matsunaga, T., Tsukada, H., Okada, H., et al. (2001). Methamphetamine-related psychiatric symptoms and reduced brain dopamine transporters studies with PET. **American Journal of Psychiatry**, 158(8), 1206-1214.
- Shashidharan, P., Huntley, G.W., Murray, J.M., Buku, A., Moran, T., Walsh, M.J., et al. (1997). Immunohistochemistry localization of the neuron-specific glutamate transporter EAAC1 (EAAT3) in rat brain and spinal cord revealed by a novel monoclonal antibody. **Brain Research**, 773(1-2), 139-148.
- Sheng, M., and Kim, M.J. (2002). Postsynaptic signaling and plasticity mechanisms. **Science**, 298(5594), 776-780.

- Sherman, S.G., Danielle German, M.P.H., Bangorn Sirsrojn, M.A., Nick Thomson, M.P.H., Apinun Aramrattana, M.D., and Celentano, D.D. (2008). Initiation of methamphetamine use among young Thai drug users: A quantitative study. **Journal of Adolescent Health**, 42(1), 36-42.
- Shigeri, Y., Seal, R.P., and Shimamoto K. (2004). Molecular pharmacology of glutamate transporters EAATs and VGLUTs. **Brain Research Reviews**, 45(3), 250-265.
- Shirai, Y., Shirakawa, O., Nishino, N., Saito, N., and Nakai, H. (1996). Increased striatal glutamate transporter by repeated intermittent administration of methamphetamine. **Psychiatry and Clinical Neurosciences**, 50(3), 161-164.
- Shoblock, J.R., Sullivan, E.B., Maisonneuve, I.M., and Glick, S.D. (2003). Neurochemical and behavioral differences between d-methamphetamine and d-amphetamine in rats. **Psychopharmacology (Berl)**, 165(4), 359-369.
- Sidiropoulou, K. (2001). Amphetamine administration does not alter protein levels of the GLT-1 and EAAC1 glutamate transporter subtypes in rat midbrain, nucleus accumbens, striatum, or prefrontal cortex. **Molecular Brain Research**, 90(2), 187-192.
- Simon, S.L., Domier, C., and Carnell, J. (2000). Cognitive impairment in individuals currently using methamphetamine. **American Journal on Addictions**, 9(3), 222-231.
- Simon, S.L., Domier, C.P., Sim, T., Richardson, K., Rawson, R.A., and Ling, W. (2002). Cognitive performance of current methamphetamine and cocaine abusers. **Journal of Addictive Diseases**, 21(1), 61-74.
- Singh, N.A., Bush, L.G., Gibb, J.W., and Hanson, G.R. (1990). Dopamine-mediated changes in central nervous system neurotensin systems: a role for NMDA receptors. **European Journal of Pharmacology**, 187(3), 337-344.
- Singh, N.A., Midgley, L.P., Bush, L.G., Gibb, J.W., and Hanson, G.R. (1991). N-Methyl-D-aspartate receptors mediates dopamine-induced changes in extrapyramidal and limbic dynorphin systems. **Brain Research**, 555(2), 233-238.

- Snider, B.J., and Choi, D.W. (2002). Glutamate and neurotoxicity. In B.H. Herman, J. Frankenheim, R. Litten, P.H. Sheridan, F.F. Weight, and S.R. Zukin (Eds.), **Glutamate and Addiction** (p.51-61). Totowa: Humana Press.
- Sonsalla, P.K., Gibb, J.W., and Hanson, G.R. (1986). Roles of D1 and D2 dopamine receptor subtypes in mediating the methamphetamine induced changes in monoamine systems. **The Journal of Pharmacology and Experimental Therapeutics**, 238(3), 932-937.
- Sonsalla, P.K., Jochnowitz, N.D., and Zeevalk, G.D. (1996). Treatment of mice with methamphetamine produces cell loss in the substantia nigra. **Brain Research**, 738(1), 172-175.
- Sonsalla, P.K., Nicklas, W.J., and Heikkila, R.E. (1989). Role for excitatory amino acid in methamphetamine-induced nigrostriatal dopaminergic toxicity. **Science**, 243(4889), 389-400.
- Srisupanont, M., Ali, R., Marsden, J., Sunga, A., Wada, K., and Monteiro, M. (2003). Psychotic symptoms in methamphetamine psychotic in-patients. **International Journal of Neuropsychopharmacology**, 6(4), 347-352.
- Squire, L.R., and Kandel, E.R. (1999). **Memory: From Mind to Molecules**. New York: Scientific American Library.
- Stephans, S.E., and Yamamoto, B.K. (1994). Methamphetamine-induced neurotoxicity: roles for glutamate and dopamine efflux. **Synapse**, 17(3), 203-209.
- Stephans, S.E., and Yamamoto, B.K. (1995). Effect of repeated methamphetamine administrations on dopamine and glutamate efflux in rat prefrontal cortex. **Brain Research**, 700(1), 99-106.
- Strock, T., Schulte, S., Hofmann, K., and Stoffel, W. (1992). Structure, expression and functional analysis of a Na⁺-dependent glutamate/aspartate transporter from the rat brain. **Proceedings of the National Academy of Sciences of the United States of America**, 89(22), 10955-10959.
- Struzynska, L., Chalimoniuk, M., and Sulkowski, G. (2005). Changes in expression of neuronal and glial glutamate transporters in lead-exposed adult rat brain. **Neurochemistry International**, 47(5), 326-333.

- Sulzer, D., Maidment, N.T., and Rayport, S. (1993). Amphetamine and other weak bases act to promote reverse transporter of dopamine in ventral midbrain neurons. **Journal of Neurochemistry**, 60(2), 527-535.
- Swanson, L.W. (2000). Cerebral hemisphere regulation of motivated behavior. **Brain Research**, 886(1-2), 113-164.
- Takarada, T., Hinoi, E., Balcar, V.J., and Yoneda, Y. (2004). Possible expression of functional glutamate transporters in the rat testis. **Journal of Endocrinology**, 181, 133-244.
- Tanaka, K., Watase, T., Manabe, K., Yamada, M., Watanabe, K., Takahashi, H., et al. (1997). Epilepsy and exacerbation of brain injury in mice lacking the glutamate transporter GLT-1. **Science**, 276(5319), 1699-1702.
- Tanaka, K. (2000). Functions of glutamate transporters in the brain. **Neuroscience Research**, 37, 15-19.
- Toda, S., Mc, Ginty, J.F., and Kalivas, P.W. (2002). Repeated cocaine administration alters the expression of genes in corticolimbic circuitry after a 3-week withdrawal: a DNA macroarray study. **Journal of Neurochemistry**, 82(5), 1290-1299.
- Tovar, K.R., and Westbrook, G.L. (1999). The incorporation of NMDA receptors with a distinct subunit composition at nascent hippocampal synapses in vitro. **Journal of Neuroscience**, 19(10), 4180-4188.
- Tovar, K.R., and Westbrook, G.L. (2002). Mobile NMDA receptors at hippocampal synapses. **Neuron**, 34(2), 255-264.
- Turchan, J., Maj, M., and Przewlocka, B. (2003). The effect of drug of abuse on NMDAR1 receptor expression in the rat limbic system. **Drug and Alcohol Dependence**, 72(2), 193-196.
- Tsao, L.I., Ladenheim, B., Andrews, A.M., Chiueh, C.C., and Cadet, T.P. (1998). Delta opioid peptide (D-Ala²-leu⁵) enkephalin blocks the long-term loss of dopamine transporters induced by multiple administrations of methamphetamine: involvement of opioid receptors and reactive oxygen species. **Journal of Pharmacology and Experimental Therapeutics**, 287, 322-331.

- Tzschentke, T.M., and Schmidt, W.J. (2003). Glutamatergic mechanisms in addiction. **Molecular Psychiatry**, 8, 373-382.
- Ueda, Y., Doi, T., Nagatomo, K., and Nagajima, A. (2007). In vivo activation of N-methyl-d-aspartate receptors generates free radicals and reduces antioxidant ability in the rat hippocampus: Experimental protocol of in vivo ESR spectroscopy and microdialysis for redox status evaluation. **Brain Research**, 1178(31), 20-27.
- Ulas, J., and Cotman, C.W. (1997). Decreased expression of N-methyl-D-aspartate receptor 1 messenger RNA in select region as of Alzheimer brain. **Neuroscience**, 79(4), 973-982.
- United Nations Office on Drugs and Crime Regional Centre for East Asia and the Pacific. (2004). **Amphetamine-type Stimulants in East Asia and the Pacific**. Bangkok: United Nations Office on Drugs and Crime Regional Centre for East Asia and the Pacific publication.
- United Nations Office on Drugs and Crime. (2006). **Annual Reports Questionnaires, Government Reports: Consumption, Annual prevalence of drug abuse**. Slovakia: United Nations publication.
- United Nations Office on Drugs and Crime. (2007). **World Drug Report**. Slovakia: United Nations publication.
- Vanderschuren, L.J., and Kalivas, P.W. (2000). Alterations in dopaminergic and glutamatergic transmission in the induction and expression of behavioral sensitization: a critical review of preclinical studies. **Psychopharmacology (Berl)**, 151(2-3), 99-120
- Volkow, N.D., Chang, L., Wang, G.J., Fowler, J.S., Leonido-Yee, M., Franceschi, D., et al. (2001a). Association of dopamine transporter reduction with psychomotor impairment in methamphetamine abusers. **American Journal of Psychiatry**, 158(3), 377-382.
- Volkow, N.D., Chang, L., Wang, G.J., Fowler, J.S., Franceschi, D., and Sedler, M. (2001b). Loss of dopamine transporters in methamphetamine abusers recovers with protracted abstinence. **Journal of Neuroscience**, 21(23), 9414-9418.

- Volkow, N.D., Chang, L., Wang, G.J., Fowler, J.S., Ding, Y.S., Sedler, M., et al. (2001c). Low level of brain dopamine D2 receptors in methamphetamine abuser: association with metabolism in the orbitofrontal cortex. **American Journal of Psychiatry**, 158(12), 2015-2021.
- Volkow, N.D., Fowler, J.S., and Wang, G.J. (2003). The addiction of human brain: insights from imaging studies. **Journal of Clinical Investigation**, 111(10), 1444-1151.
- Vemuganti, L., Rao, R., Dogan, A., Todd, K.G., Bowen, K.K., Kim, B.T., et al. (2001). Antisense knockdown of the glial glutamate transporter GLT-1, but not the neuronal glutamate transporter EAAC1, exacerbates transient focal cerebral ischemia-induced neuronal damage in rat brain. **Journal of Neuroscience**, 21(6), 1876-1883.
- Vermes, I., and Haanen, C. (1994). Apoptosis and programmed cell death in health and disease. **Advances in Clinical Chemistry**, 31(2), 177-246.
- Wahle, S., and Stoffel, W. (1996). Membrane topology of the high-affinity L-glutamate transporter (GLAST-1) of the central nervous system. **Journal of Cell Biology**, 135(6), 1867-1877.
- Wallace, T., Gudelsky, G.A., and Vorhees, C.V. (1999). Methamphetamine-induced neurotoxicity alter locomotor activity stereotypic behavior, and stimulated dopamine release in the rat. **Journal of Neuroscience**, 19(20), 9141-9148.
- Witter, M.P. (2003). Organization of cortico-hippocampal networks in rats related to learning and memory. **International Congress Series**, 1250, 131-145.
- White, F.J., and Kilivas, P.W. (1998). Neuroadaptation involved in amphetamine and cocaine addiction. **Drug Alcohol Dependence**, 51(1-2), 141-153.
- Wolf, M.E. (1998). The role of excitatory amino acids in behavioral sensitization to Psychomotor stimulants. **Progress in Neurobiololy**, 54(6), 679-720.
- Wolf, M.E. (2002). Addiction and glutamate-dependent plasticity. In B.H. Herman, J. Frankenheim, R. Litten, P.H. Sheridan, F.F. Weight, and S.R. Zuckin (Eds.), **Glutamate and Addiction** (p.127-142). Totowa: Humana Press.
- Wolf, M.E., Sun, X., Mangiavacchi, S., and Chao, S.Z. (2004). Psychomotor stimulants and neuronal plasticity. **Neuropharmacology**, 47 (1), 61-79.

- Xu, W., Zhu, J., and Angulo, J.A. (2005). Induction of striatal pre- and postsynaptic damage by methamphetamine requires the dopamine receptors. *Synapse*, 58(2), 110-121.
- Xue, C.J., Ng, J.P., Li, Y., and Wolf, M.E. (1996). Acute and repeated systemic amphetamine administration: effects on extracellular glutamate, aspartate, and serine levels in rat ventral tegmental area and nucleus accumbens. *Journal of Neurochemistry*, 67(1), 352-363.
- Yamamoto, H., Kitamura, N., Lin, X.H., Ikeuchi, Y., Hashimoto, T., Shirakawa, O., et al. (1999). Differential changes in glutamatergic transmission via N-methyl-D-aspartate receptors in the hippocampus and striatum of rats behaviourally sensitized to methamphetamine. *International journal of neuropsychopharmacology*, 2(3), 155-163.
- Yang Lu, W., Ye Man, H., Ju, W., Trimble, W.S., MacDonald, J.F., and Wang, Y.T. (2001). Activation of synaptic NMDA receptor induces membrane insertion of new AMPA receptors and LTP in cultured hippocampal neurons. *Neuron*, 29(1), 243-254.
- Young, A.B., Greenamyre, J.T., Hollingsworth, Z., Albin, R., D'Amato, C., Shoulson, I., et al. (1988). NMDA receptor losses in putamen from patients with Huntington's disease. *Science*, 241(4868), 981-983.
- Yu, M.F., Lin, T.Y., Ho, W.H., and Yin, H.S. (2001). Amphetamine induces differential changes in the gene expression of metabotropic glutamate receptor 5 in cultured cortical and hippocampal neurons. *Journal of Molecular Neuroscience*, 17(1), 13-24.
- Yu, M.F., Lin, W.W., Li, L.T., and Yin, H.S. (2003). Activation of metabotropic glutamate receptor 5 is associated with effect of amphetamine on brain neurons. *Synapse*, 50(4), 334-244.
- Yui, K., Ikemoto, S., Goto, K., Nishijima, K., Yoshino, T., and Ishiguro, T. (2002). Spontaneous recurrence of methamphetamine-induced paranoid-hallucinatory states in female subjects: Susceptibility to psychotic states and implications for relapse of schizophrenia. *Pharmacopsychiatry*, 35(2), 62-71.

- Zhang, W.N., Pothuizen, H.H.J., Feldon, J., and Rawlins, J.N.P. (2004). Dissociation of function within the hippocampus: effects of dorsal, ventral and complete excitotoxic hippocampal lesions on spatial navigation. *Neuroscience*, 127(2), 289-300.
- Zhu, J.P.Q., Wenjing, Xu., Angulo, N., and Angulo, J.A. (2006). Methamphetamine-induced striatal apoptosis in the mouse brain: Comparison of a binge to an acute bolus drug administration. *Neurotoxicology*, 27(1), 131-136.

