



Carvalho et al.:

Contribution of Animal Models to Contemporary Understanding of Attention Deficit Hyperactivity Disorder

Supplementary Data

List of 211 retrieved articles used for citation analysis

- Adriani, W., Caprioli, A., Granstrem, O. et al. (2003). The spontaneously hypertensive-rat as an animal model of ADHD: Evidence for impulsive and non-impulsive subpopulations. *Neurosci Biobehav Rev* 27, 639-651. <http://dx.doi.org/10.1016/j.neubiorev.2003.08.007>
- Adriani, W., Rea, M., Baviera, M. et al. (2004). Acetyl-L-carnitine reduces impulsive behaviour in adolescent rats. *Psychopharmacology* 176, 296-304. <http://dx.doi.org/10.1007/s00213-004-1892-9>
- Alpert, J. E., Cohen, D. J., Shaywitz, B. A. et al. (1978). Animal models and childhood behavioral disturbances: Dopamine depletion in the newborn rat pup. *J Am Acad Child Psychiatry* 17, 239-251. [http://dx.doi.org/10.1016/S0002-7138\(10\)60089-1](http://dx.doi.org/10.1016/S0002-7138(10)60089-1)
- Andersen, S. L. (2002). Changes in the second messenger cyclic AMP during development may underlie motoric symptoms in attention deficit/hyperactivity disorder (ADHD). *Behav Brain Res* 130, 197-201. [http://dx.doi.org/10.1016/S0166-4328\(01\)00417-X](http://dx.doi.org/10.1016/S0166-4328(01)00417-X)
- Anderson, C. M., Lowen, S. B. and Renshaw, P. F. (2006). Emotional task-dependent low-frequency fluctuations and methylphenidate: Wavelet scaling analysis of 1/f-type fluctuations in fMRI of the cerebellar vermis. *J Neurosci Meth* 151, 52-61. <http://dx.doi.org/10.1016/j.jneumeth.2005.09.020>
- Anisman, H. and McIntyre, D. C. (2002). Conceptual, spatial, and cue learning in the Morris water maze in fast or slow kindling rats: Attention deficit comorbidity. *J Neurosci* 22, 7809-7817.
- Archer, T., Fredriksson, A., Sundström, E. et al. (1988). Prenatal methylazoxymethanol treatment potentiates d-amphetamine- and methylphenidate-induced motor activity in male and female rats. *Pharmacol Toxicol* 63, 233-239. <http://dx.doi.org/10.1111/j.1600-0773.1988.tb00946.x>
- Aspide, R., Carnevale, U. A. G., Sergeant, J. A. and Sadile, A. G. (1998). Non-selective attention and nitric oxide in putative animal models of attention-deficit hyperactivity disorder. *Behav Brain Res* 95, 123-133. [http://dx.doi.org/10.1016/S0166-4328\(97\)00217-9](http://dx.doi.org/10.1016/S0166-4328(97)00217-9)
- Aspide, R., Fresiello, A., De Filippis, G. et al. (2000). Non-selective attention in a rat model of hyperactivity and attention deficit: Subchronic methylphenidate and nitric oxide synthesis inhibitor treatment. *Neurosci Biobehav Rev* 24, 59-71. [http://dx.doi.org/10.1016/S0149-7634\(99\)00045-7](http://dx.doi.org/10.1016/S0149-7634(99)00045-7)
- Augustyniak, P. N., Kourrich, S., Rezazadeh, S. M. et al. (2006). Differential behavioral and neurochemical effects of cocaine after early exposure to methylphenidate in an animal model of attention deficit hyperactivity disorder. *Behav Brain Res* 167, 379-382. <http://dx.doi.org/10.1016/j.bbr.2005.09.014>
- Avale, M. E., Falzone, T. L., Gelman, D. M. et al. (2004). The dopamine D4 receptor is essential for hyperactivity and impaired behavioral inhibition in a mouse model of attention deficit/hyperactivity disorder. *Mol Psychiatry* 9, 718-726.
- Azarbar, A., McIntyre, D. C. and Gilby, K. L. (2010). Caloric restriction alters seizure disposition and behavioral profiles in seizure-prone (fast) versus seizure-resistant (slow) rats. *Behav Neurosci* 124, 106-114.
- Barbelivien, A., Ruotsalainen, S. and Sirviö, J. (2001). Metabolic alterations in the prefrontal and cingulate cortices are related to behavioral deficits in a rodent model of attention-deficit hyperactivity disorder. *Cereb Cortex* 11, 1056-1063. <http://dx.doi.org/10.1093/cercor/11.11.1056>
- Barcus, R., Schwebel, A. I. and Corson, S. A. (1980). An animal model of the hyperactive-child syndrome suitable for the study of the effects of food additives. *Pavlov J Biol Sci* 15, 183-187.
- Berger, D. F. and Sagvolden, T. (1998). Sex differences in operant discrimination behaviour in an animal model of attention-deficit hyperactivity disorder. *Behav Brain Res* 94, 73-82. [http://dx.doi.org/10.1016/S0166-4328\(97\)00171-X](http://dx.doi.org/10.1016/S0166-4328(97)00171-X)
- Besson, M., Suarez, S., Cormier, A. et al. (2008). Chronic nico-



This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International license (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is appropriately cited.

<http://dx.doi.org/10.14573/altex.1507311s>



- tine exposure has dissociable behavioural effects on control and beta2^{-/-} mice. *Behav Genet* 38, 503-514. <http://dx.doi.org/10.1007/s10519-008-9216-1>
- Bizot, J. C., Chenault, N., Houzé, B. et al. (2007). Methylphenidate reduces impulsive behaviour in juvenile Wistar rats, but not in adult Wistar, SHR and WKY rats. *Psychopharmacology* 193, 215-223. <http://dx.doi.org/10.1007/s00213-007-0781-4>
- Blondeau, C. and Dellu-Hagedorn, F. (2007). Dimensional analysis of ADHD subtypes in rats. *Biol Psychiatry* 61, 1340-1350. <http://dx.doi.org/10.1016/j.biopsych.2006.06.030>
- Boix, F., Qiao, S. W., Kolpus, T. and Sagvolden, T. (1998). Chronic L-deprenyl treatment alters brain monoamine levels and reduces impulsiveness in an animal model of Attention-Deficit/Hyperactivity Disorder. *Behav Brain Res* 94, 153-162. [http://dx.doi.org/10.1016/S0166-4328\(97\)00176-9](http://dx.doi.org/10.1016/S0166-4328(97)00176-9)
- Brown, J. A., Emnett, R. J., White, C. R. et al. (2010). Reduced striatal dopamine underlies the attention system dysfunction in neurofibromatosis-1 mutant mice. *Hum Mol Genet* 19, 4515-4528. <http://dx.doi.org/10.1093/hmg/ddq382>
- Bruno, K. J. and Hess, E. J. (2006). The α 2C-adrenergic receptor mediates hyperactivity of coloboma mice, a model of attention deficit hyperactivity disorder. *Neurobiol Dis* 23, 679-688. <http://dx.doi.org/10.1016/j.nbd.2006.05.007>
- Bruno, K. J., Freet, C. S., Twining, R. C. et al. (2007). Abnormal latent inhibition and impulsivity in coloboma mice, a model of ADHD. *Neurobiol Dis* 25, 206-216. <http://dx.doi.org/10.1016/j.nbd.2006.09.009>
- Bucci, D. J., Hopkins, M. E., Keene, C. S. et al. (2008). Sex differences in learning and inhibition in spontaneously hypertensive rats. *Behav Brain Res* 187, 27-32. <http://dx.doi.org/10.1016/j.bbr.2007.08.022>
- Bull, E., Reavill, C., Hagan, J. J. et al. (2000). Evaluation of the spontaneously hypertensive rat as a model of attention deficit hyperactivity disorder: Acquisition and performance of the DRL-60s test. *Behav Brain Res* 109, 27-35. [http://dx.doi.org/10.1016/S0166-4328\(99\)00156-4](http://dx.doi.org/10.1016/S0166-4328(99)00156-4)
- Bymaster, F. P., Katner, J. S., Nelson, D. L. et al. (2002). Atomoxetine increases extracellular levels of norepinephrine and dopamine in prefrontal cortex of rat: A potential mechanism for efficacy in attention deficit/hyperactivity disorder. *Neuropsychopharmacology* 27, 699-711. [http://dx.doi.org/10.1016/S0893-133X\(02\)00346-9](http://dx.doi.org/10.1016/S0893-133X(02)00346-9)
- Campbell, B. A. and Randall, P. J. (1977). Paradoxical effects of amphetamine on preweanling and postweanling rats. *Science* 195, 888-891. <http://dx.doi.org/10.1126/science.557236>
- Carey, M. P., Diawald, L. M., Esposito, F. J. et al. (1998). Differential distribution, affinity and plasticity of dopamine D-1 and D-2 receptors in the target sites of the mesolimbic system in an animal model of ADHD. *Behav Brain Res* 94, 173-185. [http://dx.doi.org/10.1016/S0166-4328\(97\)00178-2](http://dx.doi.org/10.1016/S0166-4328(97)00178-2)
- Chase, T. D., Carrey, N., Brown, R. E. and Wilkinson, M. (2005). Methylphenidate differentially regulates c-fos and fosB expression in the developing rat striatum. *Dev Brain Res* 157, 181-191. <http://dx.doi.org/10.1016/j.devbrainres.2005.04.003>
- Chess, A. C. and Green, J. T. (2008). Abnormal topography and altered acquisition of conditioned eyeblink responses in a rodent model of attention-deficit/hyperactivity disorder. *Behav Neurosci* 122, 63-74. <http://dx.doi.org/10.1037/0735-7044.122.1.63>
- Ciccone, P. E., Ramabadran, K. and Jessen, L. M. (2006). Potential interactions of methylphenidate and atomoxetine with dextromethorphan. *J Am Pharm Assoc* 46, 472-478. <http://dx.doi.org/10.1331/154434506778073600>
- Clements, K. M., Girard, T. A., Xing, H. C. and Wainwright, P. E. (2003). Spontaneously hypertensive and Wistar Kyoto rats differ in delayed matching-to-place performance and response to dietary long-chain polyunsaturated fatty acids. *Dev Psychobiol* 43, 57-69. <http://dx.doi.org/10.1002/dev.10121>
- Clements, K. M. and Wainwright, P. E. (2006). Spontaneously hypertensive, Wistar-Kyoto and Sprague-Dawley rats differ in performance on a win-shift task in the water radial arm maze. *Behav Brain Res* 167, 295-304. <http://dx.doi.org/10.1016/j.bbr.2005.09.016>
- Clements, K. M., Saunders, A. J., Robertson, B. A. and Wainwright, P. E. (2007). Spontaneously hypertensive, Wistar Kyoto and Sprague-Dawley rats differ in their use of place and response strategies in the water radial arm maze. *Neurobiol Learn Mem* 87, 285-294. <http://dx.doi.org/10.1016/j.nlm.2006.09.003>
- Clements, K. M. and Wainwright, P. E. (2007). Spontaneously hypertensive, Wistar Kyoto and Sprague-Dawley rats differ in performance on a win-stay task and a conditioned cue preference task in the water radial arm maze. *Behav Brain Res* 183, 169-177. <http://dx.doi.org/10.1016/j.bbr.2007.06.008>
- Clemow, D. B., Steers, W. D. and Tuttle, J. B. (2000). Stretch-activated signaling of nerve growth factor secretion in bladder and vascular smooth muscle cells from hypertensive and hyperactive rats. *J Cell Physiol* 183, 289-300. [http://dx.doi.org/10.1002/\(SICI\)1097-4652\(200006\)183:3<289::AID-JCP1>3.0.CO;2-6](http://dx.doi.org/10.1002/(SICI)1097-4652(200006)183:3<289::AID-JCP1>3.0.CO;2-6)
- Colorado, R. A., Shumake, J., Conejo, N. M. et al. (2006). Effects of maternal separation, early handling, and standard facility rearing on orienting and impulsive behavior of adolescent rats. *Behav Process* 71, 51-58. <http://dx.doi.org/10.1016/j.beproc.2005.09.007>
- Dalley, J. W., Theobald, D. E., Bouger, P. et al. (2004). Cortical cholinergic function and deficits in visual attentional performance in rats following 192 IgG-saporin-induced lesions of the medial prefrontal cortex. *Cereb Cortex* 14, 922-932. <http://dx.doi.org/10.1093/cercor/bhh052>
- Dalley, J. W., Lääne, K., Theobald, D. E. et al. (2007). Enduring deficits in sustained visual attention during withdrawal of intravenous methylenedioxymethamphetamine self-administration in rats: Results from a comparative study with d-amphetamine and methamphetamine. *Neuropsychopharmacology* 32, 1195-1206. <http://dx.doi.org/10.1038/sj.npp.1301220>
- Danker, J. F. and Duong, T. Q. (2007). Quantitative regional cerebral blood flow MRI of animal model of attention-deficit/hyperactivity disorder. *Brain Res* 1150, 217-224. <http://dx.doi.org/10.1016/j.brainres.2007.02.082>

- DasBanerjee, T., Middleton, F. A., Berger, D. F. et al. (2008). A comparison of molecular alterations in environmental and genetic rat models of ADHD: A pilot study. *Am J Med Genet B: Neuropsychiatr* 147, 1554-1563. <http://dx.doi.org/10.1002/ajmg.b.30877>
- Davies, W., Humby, T., Isles, A. R. et al. (2007). X-monosomy effects on visuospatial attention in mice: A candidate gene and implications for Turner syndrome and attention deficit hyperactivity disorder. *Biol Psychiatry* 61, 1351-1360. <http://dx.doi.org/10.1016/j.biopsych.2006.08.011>
- Davies, W., Humby, T., Kong, W. et al. (2009). Converging pharmacological and genetic evidence indicates a role for steroid sulfatase in attention. *Biol Psychiatry* 66, 360-367. <http://dx.doi.org/10.1016/j.biopsych.2009.01.001>
- De Luca, V., Muglia, P., Jain, U. et al. (2002). A drosophila model for attention deficit hyperactivity disorder (ADHD). *Neuromolecular Med* 2, 281-287. <http://dx.doi.org/10.1385/NMM:2:3:281>
- De Villiers, A. S., Russell, V. A., Sagvolden, T. et al. (1995). $\beta 2$ Mediated inhibition of [3H] dopamine release from nucleus accumbens slices and monoamine levels in a rat model for attention-deficit hyperactivity disorder. *Neurochem Res* 20, 427-433. <http://dx.doi.org/10.1007/BF00973098>
- Decker, M. J., Jones, K. A., Solomon, I. G. et al. (2005). Reduced extracellular dopamine and increased responsiveness to novelty: Neurochemical and behavioral sequelae of intermittent hypoxia. *Sleep* 28, 169-176.
- dela Peña, I., Ahn, H. S., Choi, J. et al. (2010). Reinforcing effects of methamphetamine in an animal model of attention-deficit/hyperactivity disorder – the spontaneously hypertensive rat. *Behav Brain Funct* 6, 72. <http://dx.doi.org/10.1186/1744-9081-6-72>
- Dobrovolsky, V. N., Boctor, S. Y., Twaddle, N. C. et al. (2010). Flow cytometric detection of Pig-A mutant red blood cells using an erythroid-specific antibody: Application of the method for evaluating the in vivo genotoxicity of methylphenidate in adolescent rats. *Environ Molecular Mutagen* 51, 138-145. <http://dx.doi.org/10.1002/em.20519>
- Dow-Edwards, D. L., Weedon, J. C. and Hellmann, E. (2008). Methylphenidate improves performance on the radial arm maze in periadolescent rats. *Neurotoxicol Teratol* 30, 419-427. <http://dx.doi.org/10.1016/j.ntt.2008.04.001>
- Drerup, J. M., Hayashi, K., Cui, H. et al. (2010). Attention-deficit/hyperactivity phenotype in mice lacking the cyclin-dependent kinase 5 cofactor p35. *Biol Psychiatry* 68, 1163-1171. <http://dx.doi.org/10.1016/j.biopsych.2010.07.016>
- Eagle, D. M., Tufft, M. R., Goodchild, H. L. and Robbins, T. W. (2007). Differential effects of modafinil and methylphenidate on stop-signal reaction time task performance in the rat, and interactions with the dopamine receptor antagonist cis-flupenthixol. *Psychopharmacology* 192, 193-206. <http://dx.doi.org/10.1007/s00213-007-0701-7>
- Eisenberg, J., Brecher-Fride, E., Weizman, R. et al. (1982). Dopamine receptors in a rat model of minimal brain dysfunction. *Neuropsychobiology* 8, 151-155. <http://dx.doi.org/10.1159/000117891>
- Elsner, J. (1991). Tactile-kinesthetic system of rats as an animal model for minimal brain dysfunction. *Arch Toxicol* 65, 465-473.
- Fahlke, C. and Hansen, S. (1999). Alcohol responsiveness, hyperreactivity, and motor restlessness in an animal model for attention-deficit hyperactivity disorder. *Psychopharmacology* 146, 1-9. <http://dx.doi.org/10.1007/s002130051081>
- Fan, X. and Hess, E. J. (2007). D2-like dopamine receptors mediate the response to amphetamine in a mouse model of ADHD. *Neurobiol Dis* 26, 201-211. <http://dx.doi.org/10.1016/j.nbd.2006.12.011>
- Fan, X., Xu, M. and Hess, E. J. (2010). D2 dopamine receptor subtype-mediated hyperactivity and amphetamine responses in a model of ADHD. *Neurobiol Dis* 37, 228-236. <http://dx.doi.org/10.1016/j.nbd.2009.10.009>
- Floresco, S. B., Block, A. E. and Maric, T. L. (2008). Inactivation of the medial prefrontal cortex of the rat impairs strategy set-shifting, but not reversal learning, using a novel, automated procedure. *Behav Brain Res* 190, 85-96. <http://dx.doi.org/10.1016/j.bbr.2008.02.008>
- Fox, G. B. (2004). Model of attention deficit hyperactivity disorder: Five-trial, repeated acquisition inhibitory avoidance in spontaneously hypertensive rat pups. *Curr Protoc Pharmacol Oct 1*; Chapter 5: Unit 5.37. <http://dx.doi.org/10.1002/0471141755.ph0537s26>
- Fox, A. T., Hand, D. J. and Reilly, M. P. (2008). Impulsive choice in a rodent model of attention-deficit/hyperactivity disorder. *Behav Brain Res* 187, 146-152. <http://dx.doi.org/10.1016/j.bbr.2007.09.008>
- Fredriksson, A. and Archer, T. (2004). Neurobehavioural deficits associated with apoptotic neurodegeneration and vulnerability for ADHD. *Neurotox Res* 6, 435-456. <http://dx.doi.org/10.1007/BF03033280>
- Fujita, S., Okutsu, H., Yamaguchi, H. et al. (2003). Altered pre- and postsynaptic dopamine receptor functions in spontaneously hypertensive rat: An animal model of attention-deficit hyperactivity disorder. *J Oral Sci* 45, 75-83.
- Gainetdinov, R. R., Wetsel, W. C., Jones, S. R. et al. (1999). Role of serotonin in the paradoxical calming effect of psychostimulants on hyperactivity. *Science* 283, 397-401. <http://dx.doi.org/10.1126/science.283.5400.397>
- Gamo, N. J., Wang, M. and Arnsten, A. F. (2010). Methylphenidate and atomoxetine enhance prefrontal function through α 2-adrenergic and dopamine D 1 receptors. *J Am Acad Child Adolesc Psychiatry* 49, 1011-1023. <http://dx.doi.org/10.1016/j.jaac.2010.06.015>
- Gasior, M., Bergman, J., Kallman, M. J. and Paronis, C. A. (2005). Evaluation of the reinforcing effects of monoamine reuptake inhibitors under a concurrent schedule of food and IV drug delivery in rhesus monkeys. *Neuropsychopharmacology* 30, 758-764. <http://dx.doi.org/10.1038/sj.npp.1300593>
- Gilby, K. L., Thorne, V., Patey, A. and McIntyre, D. C. (2007). Ruling out postnatal origins to attention-deficit/hyperactivity disorder (ADHD)-like behaviors in a seizure-prone rat strain. *Behav Neurosci* 121, 370-379. <http://dx.doi.org/10.1037/0735-7044.121.2.370>



- Gilby, K. L., Jans, J. and McIntyre, D. C. (2009). Chronic omega-3 supplementation in seizure-prone versus seizure-resistant rat strains: A cautionary tale. *Neuroscience* 163, 750-758. <http://dx.doi.org/10.1016/j.neuroscience.2009.07.013>
- Glaser, P. E., Surgener, S. P., Grondin, R. et al. (2006). Cerebellar neurotransmission in attention-deficit/hyperactivity disorder: Does dopamine neurotransmission occur in the cerebellar vermis? *J Neurosci Meth* 151, 62-67. <http://dx.doi.org/10.1016/j.jneumeth.2005.09.019>
- Gonzalez-Lima, F. and Sadile, A. G. (2000). Network operations revealed by brain metabolic mapping in a genetic model of hyperactivity and attention deficit: The naples high-and low-excitability rats. *Neurosci Biobehav Rev* 24, 157-160. [http://dx.doi.org/10.1016/S0149-7634\(99\)00049-4](http://dx.doi.org/10.1016/S0149-7634(99)00049-4)
- Gowan, J. D., Coizet, V., Devonshire, I. M. and Overton, P. G. (2008). D-amphetamine depresses visual responses in the rat superior colliculus: A possible mechanism for amphetamine-induced decreases in distractibility. *J Neural Transm* 115, 377-387. <http://dx.doi.org/10.1007/s00702-007-0858-6>
- Grabli, D., McCairn, K., Hirsch, E. C. et al. (2004). Behavioural disorders induced by external globus pallidus dysfunction in primates: I. Behavioural study. *Brain* 127, 2039-2054. <http://dx.doi.org/10.1093/brain/awh220>
- Hand, D. J., Fox, A. T. and Reilly, M. P. (2006). Response acquisition with delayed reinforcement in a rodent model of attention-deficit/hyperactivity disorder (ADHD). *Behav Brain Res* 175, 337-342. <http://dx.doi.org/10.1016/j.bbr.2006.09.001>
- Harvey, R. C., Sen, S., Deaciuc, A. et al. (2011). Methylphenidate treatment in adolescent rats with an attention deficit/hyperactivity disorder phenotype: Cocaine addiction vulnerability and dopamine transporter function. *Neuropsychopharmacology* 36, 837-847. <http://dx.doi.org/10.1038/npp.2010.223>
- Hewitt, K. N., Marsden, C. A., Hollis, C. P. and Fone, K. C. (2009). Behavioural characterisation of the effects of acute and repeated administration of GBR 12909 in rats: Further evaluation of a potential model of ADHD. *Neuropharmacology* 57, 678-686. <http://dx.doi.org/10.1016/j.neuropharm.2009.08.006>
- Highfield, D. A., Hu, D. and Amsel, A. (1998). Alleviation of x-irradiation-based deficit in memory-based learning by d-amphetamine: Suggestions for attention deficit-hyperactivity disorder. *Proc Natl Acad Sci U S A* 95, 5785-5788.
- Highfield, D. A., Lilliquist, M. W. and Amsel, A. (1999). Reversal of a postnatal alcohol-induced deficit in learned persistence in the rat by d-amphetamine. *Alcohol Clin Exp Res* 23, 1094-1101. <http://dx.doi.org/10.1111/j.1530-0277.1999.tb04230.x>
- Hirano, M., Rakwal, R., Shibato, J. et al. (2008). Proteomics and transcriptomics-based screening of differentially expressed proteins and genes in brain of Wig rat: A model for attention deficit hyperactivity disorder (ADHD) research. *J Proteome Res* 7, 2471-2489. <http://dx.doi.org/10.1021/pr800025t>
- Holene, E., Nafstad, I., Skaare, J. U. and Sagvolden, T. (1998). Behavioural hyperactivity in rats following postnatal exposure to sub-toxic doses of polychlorinated biphenyl congeners 153 and 126. *Behav Brain Res* 94, 213-224. [http://dx.doi.org/10.1016/S0166-4328\(97\)00181-2](http://dx.doi.org/10.1016/S0166-4328(97)00181-2)
- Hong, Q., Zhang, M., Pan, X. et al. (2009). Prefrontal cortex Homer expression in an animal model of attention-deficit/hyperactivity disorder. *J Neurol Sci* 287, 205-211. <http://dx.doi.org/10.1016/j.jns.2009.07.024>
- Hopkins, M. E., Sharma, M., Evans, G. C. and Bucci, D. J. (2009). Voluntary physical exercise alters attentional orienting and social behavior in a rat model of attention-deficit/hyperactivity disorder. *Behav Neurosci* 123, 599-606. <http://dx.doi.org/10.1037/a0015632>
- Horner, W. E., Johnson, D. E., Schmidt, A. W. and Rollema, H. (2007). Methylphenidate and atomoxetine increase histamine release in rat prefrontal cortex. *Eur J Pharmacol* 558, 96-97. <http://dx.doi.org/10.1016/j.ejphar.2006.11.048>
- Howells, F. M. and Russell, V. A. (2008). Glutamate-stimulated release of norepinephrine in hippocampal slices of animal models of attention-deficit/hyperactivity disorder (spontaneously hypertensive rat) and depression/anxiety-like behaviours (Wistar-Kyoto rat). *Brain Res* 1200, 107-115. <http://dx.doi.org/10.1016/j.brainres.2008.01.033>
- Hsu, J. W., Lee, L. C., Chen, R. F. et al. (2010). Striatal volume changes in a rat model of childhood attention-deficit/hyperactivity disorder. *Psychiatry Res* 179, 338-341. <http://dx.doi.org/10.1016/j.psychres.2009.08.008>
- Hunziker, M. H. L., Saldana, R. L. and Neuringer, A. (1996). Behavioral variability in SHR and WKY rats as a function of rearing environment and reinforcement contingency. *J Exp Anal Behav* 65, 129-144. <http://dx.doi.org/10.1901/jeab.1996.65-129>
- Iwasaki, T. and Takasuna, M. (1986). (Spontaneous motor activity and radial-maze learning in rats neonatally treated with 6-hydroxydopamine)]. *Yakubutsu Seishin Kodo* 6, 381-388.
- Jensen, V., Rinholm, J. E., Johansen, T. et al. (2009). N-methyl-D-aspartate receptor subunit dysfunction at hippocampal glutamatergic synapses in an animal model of attention-deficit/hyperactivity disorder. *Neuroscience* 158, 353-364. <http://dx.doi.org/10.1016/j.neuroscience.2008.05.016>
- Jesmin, S., Togashi, H., Sakuma, I. et al. (2004). Gonadal hormones and frontocortical expression of vascular endothelial growth factor in male stroke-prone, spontaneously hypertensive rats, a model for attention-deficit/hyperactivity disorder. *Endocrinology* 145, 4330-4343. <http://dx.doi.org/10.1210/en.2004-0487>
- Jesmin, S., Togashi, H., Mowa, C. N. et al. (2004). Characterization of regional cerebral blood flow and expression of angiogenic growth factors in the frontal cortex of juvenile male SHRSP and SHR. *Brain Res* 1030, 172-182. <http://dx.doi.org/10.1016/j.brainres.2004.10.004>
- Jew, J. Y. and Sandquist, D. (1979). CNS changes in hyperbilirubinemia. Functional implications. *Arch Neurol* 36, 149-154. <http://dx.doi.org/10.1001/archneur.1979.00500390067007>
- Jeziarski, G., Zehle, S., Bock, J. et al. (2007). Early stress and chronic methylphenidate cross-sensitize dopaminergic responses in the adolescent medial prefrontal cortex and nucleus accumbens. *J Neurochem* 103, 2234-2244. <http://dx.doi.org/10.1111/j.1471-4159.2007.04927.x>
- Johansen, E. B. and Sagvolden, T. (2004). Response disinhibition may be explained as an extinction deficit in an animal model

- of attention-deficit/hyperactivity disorder (ADHD). *Behav Brain Res* 149, 183-196. [http://dx.doi.org/10.1016/S0166-4328\(03\)00229-8](http://dx.doi.org/10.1016/S0166-4328(03)00229-8)
- Johansen, E. B. and Sagvolden, T. (2005). Slower extinction of responses maintained by intra-cranial self-stimulation (ICSS) in an animal model of attention-deficit/hyperactivity disorder (ADHD). *Behav Brain Res* 162, 22-31. <http://dx.doi.org/10.1016/j.bbr.2005.02.035>
- Johansen, E. B. and Sagvolden, T. (2005). Behavioral effects of intra-cranial self-stimulation in an animal model of attention-deficit/hyperactivity disorder (ADHD). *Behav Brain Res* 162, 32-46. <http://dx.doi.org/10.1016/j.bbr.2005.02.033>
- Johansen, E. B., Sagvolden, T. and Kvande, G. (2005). Effects of delayed reinforcers on the behavior of an animal model of attention-deficit/hyperactivity disorder (ADHD). *Behav Brain Res* 162, 47-61. <http://dx.doi.org/10.1016/j.bbr.2005.02.034>
- Kamimura, E., Ueno, Y., Tanaka, S. et al. (2001). New rat model for attention deficit hyperactive disorder (ADHD). *Comp Med* 51, 245-251.
- Kantak, K. M., Singh, T., Kerstetter, K. et al. (2008). Advancing the spontaneous hypertensive rat model of attention deficit/hyperactivity disorder. *Behav Neurosci* 122, 340-357.
- Ke, G. M., Wang, L., Xue, H. Y. et al. (2005). In vitro and in vivo characterization of a newly developed clonidine transdermal patch for treatment of attention deficit hyperactivity disorder in children. *Biol Pharmaceut Bull* 28, 305-310. <http://dx.doi.org/10.1248/bpb.28.305>
- Kiguchi, M., Fujita, S., Lee, J. et al. (2007). Behavioral responses to methylphenidate and apomorphine in rats exposed neonatally to bisphenol-A. *J Oral Sci* 49, 311-318. <http://dx.doi.org/10.2334/josnusd.49.311>
- Kiguchi, M., Fujita, S., Oki, H. et al. (2008). Behavioural characterization of rats exposed neonatally to bisphenol-A: Responses to a novel environment and to methylphenidate challenge in a putative model of attention-deficit hyperactivity disorder. *J Neural Trans* 115, 1079-1085. <http://dx.doi.org/10.1007/s00702-008-0044-5>
- King, J. A., Barkley, R. A., Delville, Y. and Ferris, C. F. (2000). Early androgen treatment decreases cognitive function and catecholamine innervation in an animal model of ADHD. *Behav Brain Res* 107, 35-43. [http://dx.doi.org/10.1016/S0166-4328\(99\)00113-8](http://dx.doi.org/10.1016/S0166-4328(99)00113-8)
- King, J. A., Kelly, T. A. and Delville, Y. (2000). Adult levels of testosterone alter catecholamine innervation in an animal model of attention-deficit hyperactivity disorder. *Neuropsychobiology* 42, 163-168. <http://dx.doi.org/10.1159/000026687>
- Kinkead, B., Selz, K. A., Owens, M. J. and Mandell, A. J. (2006). Algorithmically designed peptides ameliorate behavioral defects in animal model of ADHD by an allosteric mechanism. *J Neurosci Meth* 151, 68-81. <http://dx.doi.org/10.1016/j.jneumeth.2005.07.015>
- Kohlert, J. G. and Bloch, G. J. (1993). A rat model for attention deficit-hyperactivity disorder. *Physiol Behav* 53, 1215-1218. [http://dx.doi.org/10.1016/0031-9384\(93\)90382-P](http://dx.doi.org/10.1016/0031-9384(93)90382-P)
- Kohlhauser, C., Mosgoeller, W., Hoeger, H. et al. (1999). Cholinergic, monoaminergic and glutamatergic changes following perinatal asphyxia in the rat. *Cell Mol Life Sci* 55, 1491-1501. <http://dx.doi.org/10.1007/s000180050388>
- Kostas, J., McFarland, D. J. and Drew, W. G. (1976). Lead-inducing hyperactivity. Chronic exposure during the neonatal period in the rat. *Pharmacology* 14, 435-442. <http://dx.doi.org/10.1159/000136626>
- Kostrzewa, R. M., Brus, R., Kalbfleisch, J. H. et al. (1994). Proposed animal model of attention deficit hyperactivity disorder. *Brain Research Bull* 34, 161-167. [http://dx.doi.org/10.1016/0361-9230\(94\)90013-2](http://dx.doi.org/10.1016/0361-9230(94)90013-2)
- Kristensen, S. E., Thomsen, M. S., Hansen, H. H. et al. (2007). The alpha7 nicotinic receptor agonist SSR180711 increases activity regulated cytoskeleton protein (Arc) gene expression in the prefrontal cortex of the rat. *Neurosci Lett* 418, 154-158. <http://dx.doi.org/10.1016/j.neulet.2007.03.016>
- Lalonde, R. and Strazielle, C. (2009). The relation between open-field and emergence tests in a hyperactive mouse model. *Neuropharmacology* 57, 722-724. <http://dx.doi.org/10.1016/j.neuropharm.2009.07.010>
- Langen, B. and Dost, R. (2011). Comparison of SHR, WKY and Wistar rats in different behavioural animal models: Effect of dopamine D1 and alpha2 agonists. *Atten Defic Hyperact Disord* 3, 1-12. <http://dx.doi.org/10.1007/s12402-010-0034-y>
- Le Pen, G., Grottick, A. J., Higgins, G. A. and Moreau, J. L. (2003). Phencyclidine exacerbates attentional deficits in a neurodevelopmental rat model of schizophrenia. *Neuropsychopharmacology* 28, 1799-1809. <http://dx.doi.org/10.1038/sj.npp.1300208>
- Lehohla, M., Russell, V. and Kellaway, L. (2001). NMDA-stimulated Ca²⁺ uptake into barrel cortex slices of spontaneously hypertensive rats. *Metab Brain Dis* 16, 133-141. <http://dx.doi.org/10.1023/A:1012532709306>
- Lehohla, M., Kellaway, L. and Russell, V. A. (2004). NMDA receptor function in the prefrontal cortex of a rat model for attention-deficit hyperactivity disorder. *Metab Brain Dis* 19, 35-42. <http://dx.doi.org/10.1023/B:MEBR.0000027415.75432.ad>
- Leo, D., Sorrentino, E., Volpicelli, F. et al. (2003). Altered mid-brain dopaminergic neurotransmission during development in an animal model of ADHD. *Neurosci Biobehav Rev* 27, 661-669. <http://dx.doi.org/10.1016/j.neubiorev.2003.08.009>
- Li, J. S. and Huang, Y. C. (2006). Early androgen treatment influences the pattern and amount of locomotion activity differently and sexually differentially in an animal model of ADHD. *Behav Brain Res* 175, 176-182. <http://dx.doi.org/10.1016/j.bbr.2006.08.020>
- Li, Q., Lu, G., Antonio, G. E. et al. (2007). The usefulness of the spontaneously hypertensive rat to model attention-deficit/hyperactivity disorder (ADHD) may be explained by the differential expression of dopamine-related genes in the brain. *Neurochem Int* 50, 848-857. <http://dx.doi.org/10.1016/j.neuint.2007.02.005>
- Li, Q., Wong, J. H., Lu, G. et al. (2009). Gene expression of synaptosomal-associated protein 25 (SNAP-25) in the prefrontal cortex of the spontaneously hypertensive rat (SHR). *Biochim Biophys Acta* 1792, 766-776. <http://dx.doi.org/10.1016/j.bbdis.2009.05.006>



- Li, W., Cui, Y., Kushner, S. A. et al. (2005). The HMG-CoA reductase inhibitor lovastatin reverses the learning and attention deficits in a mouse model of neurofibromatosis type 1. *Curr Biol* 15, 1961-1967. <http://dx.doi.org/10.1016/j.cub.2005.09.043>
- Liu, L. L., Yang, J., Lei, G. F. et al. (2008). Atomoxetine increases histamine release and improves learning deficits in an animal model of attention-deficit hyperactivity disorder: The spontaneously hypertensive rat. *Basic Clin Pharmacol Toxicol* 102, 527-532. <http://dx.doi.org/10.1111/j.1742-7843.2008.00230.x>
- Ludolph, A., Udvardi, P., Schaz, U. et al. (2010). Atomoxetine acts as an NMDA receptor blocker in clinically relevant concentrations. *Br J Pharmacol* 160, 283-291.
- Masuo, Y., Ishido, M., Morita, M. and Oka, S. (2004). Effects of neonatal treatment with 6-hydroxydopamine and endocrine disruptors on motor activity and gene expression in rats. *Neural Plast* 11, 59-76. <http://dx.doi.org/10.1155/NP.2004.59>
- McCullough, M. L. and Blackman, D. E. (1976). The behavioral effects of prenatal hypoxia in the rat. *Dev Psychobiol* 9, 335-342. <http://dx.doi.org/10.1002/dev.420090406>
- McDonald, M. P., Wong, R., Goldstein, G. et al. (1998). Hyperactivity and learning deficits in transgenic mice bearing a human mutant thyroid hormone $\beta 1$ receptor gene. *Learn Mem* 5, 289-301.
- McFadyen, M. P., Brown, R. E. and Carrey, N. (2002). Subchronic methylphenidate administration has no effect on locomotion, emotional behavior, or water maze learning in prepubertal mice. *Dev Psychobiol* 41, 123-132. <http://dx.doi.org/10.1002/dev.10059>
- Mietus, B. A., Johanson, I. B. and Terry, L. M. (2003). The neonatal rat as a developmental animal model of attention deficit hyperactivity disorder: Effects of frontal lesions on activity and learning. *Dev Psychobiol* 42, 79-90. <http://dx.doi.org/10.1002/dev.10092>
- Miller, G. M., Yatin, S. M., De La Garza II, R. et al. (2001). Cloning of dopamine, norepinephrine and serotonin transporters from monkey brain: Relevance to cocaine sensitivity. *Mol Brain Res* 87, 124-143. [http://dx.doi.org/10.1016/S0169-328X\(00\)00288-6](http://dx.doi.org/10.1016/S0169-328X(00)00288-6)
- Miller, G. M., De La Garza 2nd, R., Novak, M. A. and Madras, B. K. (2001). Single nucleotide polymorphisms distinguish multiple dopamine transporter alleles in primates: Implications for association with attention deficit hyperactivity disorder and other neuropsychiatric disorders. *Mol Psychiatry* 6, 50-58.
- Moisan, M. P., Llamas, B., Cook, M. N. and Mormede, P. (2003). Further dissection of a genomic locus associated with behavioral activity in the Wistar-Kyoto hyperactive rat, an animal model of hyperkinesis. *Mol Psychiatry* 8, 348-352. <http://dx.doi.org/10.1038/sj.mp.4001234>
- Mook, D. M. and Neuringer, A. (1994). Different effects of amphetamine on reinforced variations versus repetitions in spontaneously hypertensive rats (SHR). *Physiol Behav* 56, 939-944. [http://dx.doi.org/10.1016/0031-9384\(94\)90327-1](http://dx.doi.org/10.1016/0031-9384(94)90327-1)
- Moon, J. S., Beaudin, A. E., Verosky, S. et al. (2006). Attentional dysfunction, impulsivity, and resistance to change in a mouse model of fragile X syndrome. *Behav Neurosci* 120, 1367-1379. <http://dx.doi.org/10.1037/0735-7044.120.6.1367>
- Moran-Gates, T., Zhang, K., Baldessarini, R. J. and Tarazi, F. I. (2005). Atomoxetine blocks motor hyperactivity in neonatal 6-hydroxydopamine-lesioned rats: Implications for treatment of attention-deficit hyperactivity disorder. *Int J Neuropsychopharmacol* 8, 439-444. <http://dx.doi.org/10.1017/S1461145705005249>
- Mormede, P., Moneva, E., Bruneval, C. et al. (2002). Marker-assisted selection of a neuro-behavioural trait related to behavioural inhibition in the SHR strain, an animal model of ADHD. *Genes Brain Behav* 1, 111-116. <http://dx.doi.org/10.1034/j.1601-183X.2002.10206.x>
- Muneoka, K., Kuwagata, M., Iwata, M. et al. (2006). Dopamine transporter density and behavioral response to methylphenidate in a hyperlocomotor rat model. *Congenit Anom* 46, 155-159. <http://dx.doi.org/10.1111/j.1741-4520.2006.00119.x>
- Murphy, P., Likhodii, S. S., Hatamian, M. and Burnham, W. M. (2005). Effect of the ketogenic diet on the activity level of Wistar rats. *Pediatr Res* 57, 353-357. <http://dx.doi.org/10.1203/01.PDR.0000150804.18038.79>
- Newman, L. A., Darling, J. and McGaughy, J. (2008). Atomoxetine reverses attentional deficits produced by noradrenergic deafferentation of medial prefrontal cortex. *Psychopharmacology* 200, 39-50. <http://dx.doi.org/10.1007/s00213-008-1097-8>
- Nowak, P., Bortel, A., Dabrowska, J. et al. (2007). Amphetamine and mCPP effects on dopamine and serotonin striatal in vivo microdialysates in an animal model of hyperactivity. *Neurotox Res* 11, 131-144. <http://dx.doi.org/10.1007/BF03033391>
- Orduña, V., Hong, E. and Bouzas, A. (2007). Interval bisection in spontaneously hypertensive rats. *Behav Process* 74, 107-111. <http://dx.doi.org/10.1016/j.beproc.2006.10.013>
- Orduña, V., Valencia-Torres, L. and Bouzas, A. (2009). DRL performance of spontaneously hypertensive rats: Dissociation of timing and inhibition of responses. *Behav Brain Res* 201, 158-165. <http://dx.doi.org/10.1016/j.bbr.2009.02.016>
- Orduña, V., García, A. and Hong, E. (2010). Choice behavior in spontaneously hypertensive rats: Variable vs. fixed schedules of reinforcement. *Behav Process* 84, 465-469. <http://dx.doi.org/10.1016/j.beproc.2009.12.018>
- Pamplona, F. A., Pandolfo, P., Savoldi, R. et al. (2009). Environmental enrichment improves cognitive deficits in spontaneously hypertensive rats (SHR): Relevance for attention deficit/hyperactivity disorder (ADHD). *Prog Neuropsychopharmacol Biol Psych* 33, 1153-1160. <http://dx.doi.org/doi:10.1016/j.pnpbp.2009.06.012>
- Pandolfo, P., Pamplona, F. A., Prediger, R. D. and Takahashi, R. N. (2007). Increased sensitivity of adolescent spontaneously hypertensive rats, an animal model of attention deficit hyperactivity disorder, to the locomotor stimulation induced by the cannabinoid receptor agonist WIN 55, 212-2. *Eur J Pharmacol* 563, 141-148. <http://dx.doi.org/10.1016/j.ejphar.2007.02.013>
- Pandolfo, P., Vendruscolo, L. F., Sordi, R. and Takahashi, R. N. (2009). Cannabinoid-induced conditioned place preference in

- the spontaneously hypertensive rat—an animal model of attention deficit hyperactivity disorder. *Psychopharmacology* 205, 319-326. <http://dx.doi.org/10.1007/s00213-009-1542-3>
- Panksepp, J., Burgdorf, J., Turner, C. and Gordon, N. (2003). Modeling ADHD-type arousal with unilateral frontal cortex damage in rats and beneficial effects of play therapy. *Brain Cogn* 52, 97-105. [http://dx.doi.org/10.1016/S0278-2626\(03\)00013-7](http://dx.doi.org/10.1016/S0278-2626(03)00013-7)
- Papa, M., Sagvolden, T., Sergeant, J. A. and Sadile, A. G. (1996). Reduced CaMKII-positive neurones in the accumbens shell of an animal model of attention-deficit hyperactivity disorder. *Neuroreport* 7, 3017-3020.
- Papa, M., Sergeant, J. A. and Sadile, A. G. (1997). Differential expression of transcription factors in the accumbens of an animal model of ADHD. *Neuroreport* 8, 1607-1612.
- Papa, M., Sergeant, J. A. and Sadile, A. G. (1998). Reduced transduction mechanisms in the anterior accumbal interface of an animal model of attention-deficit hyperactivity disorder. *Behav Brain Res* 94, 187-195. [http://dx.doi.org/10.1016/S0166-4328\(97\)00179-4](http://dx.doi.org/10.1016/S0166-4328(97)00179-4)
- Papa, M., Berger, D. F., Sagvolden, T. et al. (1998). A quantitative cytochrome oxidase mapping study, cross-regional and neurobehavioural correlations in the anterior forebrain of an animal model of attention deficit hyperactivity disorder. *Behav Brain Res* 94, 197-211. [http://dx.doi.org/10.1016/S0166-4328\(97\)00180-0](http://dx.doi.org/10.1016/S0166-4328(97)00180-0)
- Papa, M., Sellitti, S. and Sadile, A. G. (2000). Remodeling of neural networks in the anterior forebrain of an animal model of hyperactivity and attention deficits as monitored by molecular imaging probes. *Neurosci Biobehav Rev* 24, 149-156. [http://dx.doi.org/10.1016/S0149-7634\(99\)00052-4](http://dx.doi.org/10.1016/S0149-7634(99)00052-4)
- Pappas, B. A., Gallivan, J. V., Dugas, T. et al. (1980). Intraventricular 6-hydroxydopamine in the newborn rat and locomotor responses to drugs in infancy: No support for the dopamine depletion model of minimal brain dysfunction. *Psychopharmacology* 70, 41-46. <http://dx.doi.org/10.1007/BF00432368>
- Pardey, M. C., Homewood, J., Taylor, A. and Cornish, J. L. (2009). Re-evaluation of an animal model for ADHD using a free-operant choice task. *J Neurosci Meth* 176, 166-171. <http://dx.doi.org/10.1016/j.jneumeth.2008.09.009>
- Perry, G. M., Sagvolden, T. and Faraone, S. V. (2010). Intraindividual variability (IIV) in an animal model of ADHD—the spontaneously hypertensive rat. *Behav Brain Funct* 6, 56. <http://dx.doi.org/10.1186/1744-9081-6-56>
- Perry, G. M. L., Sagvolden, T. and Faraone, S. V. (2010). Intraindividual variability in genetic and environmental models of attention-deficit/hyperactivity disorder. *Am J Med Genet B Neuropsychiatr Genet* 153, 1094-1101. <http://dx.doi.org/10.1002/ajmg.b.31070>
- Pamplona, F. A., Pandolfo, P. et al. (2009). Adenosine receptor antagonists improve short-term object-recognition ability of spontaneously hypertensive rats: A rodent model of attention-deficit hyperactivity disorder. *Behav Pharmacol* 20, 134-145. <http://dx.doi.org/10.1097/FBP.0b013e32832a80bf>
- Pires, V. A., Pamplona, F. A., Pandolfo, P. et al. (2010). Chronic caffeine treatment during prepubertal period confers long-term cognitive benefits in adult spontaneously hypertensive rats (SHR), an animal model of attention deficit hyperactivity disorder (ADHD). *Behav Brain Res* 215, 39-44. <http://dx.doi.org/10.1016/j.bbr.2010.06.022>
- Prediger, R. D., Pamplona, F. A., Fernandes, D. and Takahashi, R. N. (2005). Caffeine improves spatial learning deficits in an animal model of attention deficit hyperactivity disorder (ADHD) – the spontaneously hypertensive rat (SHR). *Int J Neuropsychopharmacol* 8, 583-594. <http://dx.doi.org/10.1016/j.bbr.2010.06.022>
- Puumala, T., Ruotsalainen, S., Jäkälä, P. et al. (1996). Behavioral and pharmacological studies on the validation of a new animal model for attention deficit hyperactivity disorder. *Neurobiol Learn Mem* 66, 198-211. <http://dx.doi.org/10.1006/nlme.1996.0060>
- Qian, Y., Lei, G., Castellanos, F. et al. (2010). Deficits in fine motor skills in a genetic animal model of ADHD. *Behav Brain Funct* 6, 51. <http://dx.doi.org/10.1186/1744-9081-6-51>
- Rodefer, J. S., Murphy, E. R. and Baxter, M. G. (2005). PDE10A inhibition reverses subchronic PCP-induced deficits in attentional set-shifting in rats. *Eur J Neurosci* 21, 1070-1076. <http://dx.doi.org/10.1111/j.1460-9568.2005.03937.x>
- Roessner, V., Manzke, T., Becker, A. et al. (2009). Development of 5-HT transporter density and long-term effects of methylphenidate in an animal model of ADHD. *World J Biol Psychiatry* 10, 581-585. <http://dx.doi.org/10.1080/15622970802653709>
- Roessner, V., Sagvolden, T., Dasbanerjee, T. et al. (2010). Methylphenidate normalizes elevated dopamine transporter densities in an animal model of the attention-deficit/hyperactivity disorder combined type, but not to the same extent in one of the attention-deficit/hyperactivity disorder inattentive type. *Neuroscience* 167, 1183-1191. <http://dx.doi.org/10.1016/j.neuroscience.2010.02.073>
- Ruocco, L. A., Viggiano, D., Pignatelli, M. et al. (2008). Galactosylated dopamine increases attention without reducing activity in C57BL/6 mice. *Behav Brain Res* 187, 449-454. <http://dx.doi.org/10.1016/j.bbr.2007.10.007>
- Ruocco, L. A., de Souza Silva, M. A., Topic, B. et al. (2009). Intranasal application of dopamine reduces activity and improves attention in naples high excitability rats that feature the mesocortical variant of ADHD. *Eur Neuropsychopharmacol* 19, 693-701. <http://dx.doi.org/10.1016/j.euroneuro.2009.02.005>
- Ruocco, L. A., Carnevale, U. G., Sadile, A. et al. (2009). Elevated forebrain excitatory l-glutamate, l-aspartate and d-aspartate in the naples high-excitability rats. *Behav Brain Res* 198, 24-28. <http://dx.doi.org/10.1016/j.bbr.2008.11.029>
- Ruocco, L. A., Carnevale, U. G., Sica, A. et al. (2009). Differential prepubertal handling modifies behaviour and excitatory amino acids in the forebrain of the naples high-excitability rats. *Behav Brain Res* 198, 29-36. <http://dx.doi.org/10.1016/j.bbr.2008.09.028>
- Russell, V., de Villiers, A., Sagvolden, T. et al. (1995). Altered dopaminergic function in the prefrontal cortex, nucleus accumbens and caudate-putamen of an animal model of attention-



- deficit hyperactivity disorder – the spontaneously hypertensive rat. *Brain Res* 676, 343-351. [http://dx.doi.org/10.1016/0006-8993\(95\)00135-D](http://dx.doi.org/10.1016/0006-8993(95)00135-D)
- Russell, V. A. and Wiggins, T. M. (2000). Increased glutamate-stimulated norepinephrine release from prefrontal cortex slices of spontaneously hypertensive rats. *Metabol Brain Dis* 15, 297-304. <http://dx.doi.org/10.1023/A:1011175225512>
- Russell, V. A., De Villiers, A. S., Sagvolden, T. et al. (2000). Methylphenidate affects striatal dopamine differently in an animal model for attention-deficit/hyperactivity disorder – the spontaneously hypertensive rat. *Brain Res Bull* 53, 187-192. [http://dx.doi.org/10.1016/S0361-9230\(00\)00324-5](http://dx.doi.org/10.1016/S0361-9230(00)00324-5)
- Russell, V., Allie, S. and Wiggins, T. (2000). Increased noradrenergic activity in prefrontal cortex slices of an animal model for attention-deficit hyperactivity disorder – the spontaneously hypertensive rat. *Behav Brain Res* 117, 69-74. [http://dx.doi.org/10.1016/S0166-4328\(00\)00291-6](http://dx.doi.org/10.1016/S0166-4328(00)00291-6)
- Sackler, A. M. and Weltman, A. S. (1985). Effects of methylphenidate on whirler mice: An animal model for hyperkinesis. *Life Sci* 37, 425-431. [http://dx.doi.org/10.1016/0024-3205\(85\)90404-7](http://dx.doi.org/10.1016/0024-3205(85)90404-7)
- Sadile, A. G., Pellicano, M. P., Sagvolden, T. and Sergeant, J. A. (1996). NMDA and non-NMDA sensitive (I-3 H) glutamate receptor binding in the brain of the naples high-and low-excitability rats: An autoradiographic study. *Behav Brain Res* 78, 163-174. [http://dx.doi.org/10.1016/0166-4328\(95\)00244-8](http://dx.doi.org/10.1016/0166-4328(95)00244-8)
- Sadile, A. G. (2000). Multiple evidence of a segmental defect in the anterior forebrain of an animal model of hyperactivity and attention deficit. *Neurosci Biobehav Rev* 24, 161-169. [http://dx.doi.org/10.1016/S0149-7634\(99\)00057-3](http://dx.doi.org/10.1016/S0149-7634(99)00057-3)
- Sagvolden, T., Metzger, M. A., Schiorbeck, H. K. et al. (1992). The spontaneously hypertensive rat (SHR) as an animal model of childhood hyperactivity (ADHD): Changed reactivity to reinforcers and to psychomotor stimulants. *Behav Neural Biol* 58, 103-112. [http://dx.doi.org/10.1016/0163-1047\(92\)90315-U](http://dx.doi.org/10.1016/0163-1047(92)90315-U)
- Sagvolden, T., Pettersen, M. B. and Larsen, M. C. (1993). Spontaneously hypertensive rats (SHR) as a putative animal model of childhood hyperkinesis: SHR behavior compared to four other rat strains. *Physiol Behav* 54, 1047-1055. [http://dx.doi.org/10.1016/0031-9384\(93\)90323-8](http://dx.doi.org/10.1016/0031-9384(93)90323-8)
- Sagvolden, T., Metzger, M. A. and Sagvolden, G. (1993). Frequent reward eliminates differences in activity between hyperkinetic rats and controls. *Behav Neural Biol* 59, 225-229. [http://dx.doi.org/10.1016/0163-1047\(93\)90986-R](http://dx.doi.org/10.1016/0163-1047(93)90986-R)
- Schlaepfer, I. R., Clegg, H. V., Corley, R. P. et al. (2007). Genetic study: The human protein kinase C gamma gene (PRKCG) as a susceptibility locus for behavioral disinhibition. *Addict Biol* 12, 200-209. <http://dx.doi.org/10.1111/j.1369-1600.2007.00063.x>
- Shaywitz, B. A., Klopfer, J. H. and Gordon, J. W. (1978). Methylphenidate in 6-hydroxydopamine-treated developing rat pups. Effects on activity and maze performance. *Arch Neurol* 35, 463-469. <http://dx.doi.org/10.1001/archneur.1978.00500310065014>
- Shintani, N., Tanaka, K., Hashimoto, H. and Baba, A. (2003). Altered behavioral response to centrally acting drugs in mice lacking PACAP. *Nihon Yakurigaku Zasshi* 122, 1P-4P.
- Siesser, W. B., Cheng, S. Y. and McDonald, M. P. (2005). Hyperactivity, impaired learning on a vigilance task, and a differential response to methylphenidate in the TRBPV knock-in mouse. *Psychopharmacology* 181, 653-663. <http://dx.doi.org/10.1007/s00213-005-0024-5>
- Siesser, W. B., Zhao, J., Miller, L. R. et al. (2006). Transgenic mice expressing a human mutant $\beta 1$ thyroid receptor are hyperactive, impulsive, and inattentive. *Genes Brain Behav* 5, 282-297. <http://dx.doi.org/10.1111/j.1601-183X.2005.00161.x>
- Simchon, Y., Weizman, A., and Rehavi, M. (2010). The effect of chronic methylphenidate administration on presynaptic dopaminergic parameters in a rat model for ADHD. *Eur Neuropsychopharmacol* 20, 714-720. <http://dx.doi.org/10.1016/j.euroneuro.2010.04.007>
- Souza, R. P., Soares, E. C., Rosa, D. V. et al. (2009). Cerebral DARPP-32 expression after methylphenidate administration in young and adult rats. *Int J Dev Neurosci* 27, 1-7. <http://dx.doi.org/10.1016/j.ijdevneu.2008.11.001>
- Suter, W., Martus, H. J. and Elhajouji, A. (2006). Methylphenidate is not clastogenic in cultured human lymphocytes and in the mouse bone-marrow micronucleus test. *Mutat Res* 607, 153-159. <http://dx.doi.org/10.1016/j.mrgentox.2006.02.004>
- Sutherland, K. R., Alsop, B., McNaughton, N. et al. (2009). Sensitivity to delay of reinforcement in two animal models of attention deficit hyperactivity disorder (ADHD). *Behav Brain Res* 205, 372-376. <http://dx.doi.org/10.1016/j.bbr.2009.07.011>
- Swartzwelder, H. S. (1982). Impaired maze performance in the rat caused by trimethyltin treatment: Problem-solving deficits and perseveration. *Neurobehav Toxicol Teratol* 4, 169-76.
- Terranova, J. P., Chabot, C., Barnouin, M. C. et al. (2005). SSR181507, a dopamine D2 receptor antagonist and 5-HT1A receptor agonist, alleviates disturbances of novelty discrimination in a social context in rats, a putative model of selective attention deficit. *Psychopharmacology* 181, 134-144. <http://dx.doi.org/10.1007/s00213-005-2268-5>
- Thieme, R. E., Dijkstra, H. and Stoof, J. C. (1980). An evaluation of the young dopamine-lesioned rat as an animal model for minimal brain dysfunction (MBD). *Psychopharmacology* 67, 165-169. <http://dx.doi.org/10.1007/BF00431972>
- Torres-Reveron, A., Gray, J. D., Melton, J. et al. (2009). Early postnatal exposure to methylphenidate alters stress reactivity and increases hippocampal ectopic granule cells in adult rats. *Brain Res Bull* 78, 175-181. <http://dx.doi.org/10.1016/j.brainresbull.2008.11.009>
- Trantham-Davidson, H., Vazdarjanova, A., Dai, R. et al. (2008). Up-regulation of calcyon results in locomotor hyperactivity and reduced anxiety in mice. *Behav Brain Res* 189, 244-249. <http://dx.doi.org/10.1016/j.bbr.2007.12.031>
- Tzavara, E. T., Li, D. L., Moutsimilli, L. et al. (2006). Endocannabinoids activate transient receptor potential vanilloid 1 receptors to reduce hyperdopaminergia-related hyperactivity: Therapeutic implications. *Biol Psychiatry* 59, 508-515. <http://dx.doi.org/10.1016/j.biopsych.2005.08.019>
- Ueno, K. I., Togashi, H., Mori, K. et al. (2002). Behavioural and pharmacological relevance of stroke-prone spontaneously hypertensive rats as an animal model of a developmental disorder.

- Behav Pharmacol* 13, 1-13.
- Ueno, K. I., Togashi, H., Matsumoto, M. et al. (2002). $\alpha 4\beta 2$ nicotinic acetylcholine receptor activation ameliorates impairment of spontaneous alternation behavior in stroke-prone spontaneously hypertensive rats, an animal model of attention deficit hyperactivity disorder. *J Pharmacol Exp Ther* 302, 95-100. <http://dx.doi.org/10.1124/jpet.302.1.95>
- Van Swinderen, B. and Brembs, B. (2010). Attention-like deficit and hyperactivity in a *Drosophila* memory mutant. *J Neurosci* 30, 1003-1014. <http://dx.doi.org/10.1523/JNEUROSCI.4516-09.2010>
- Viggiano, D. and Sadile, A. G. (2000). Hypertrophic A10 dopamine neurones in a rat model of attention-deficit hyperactivity disorder (ADHD). *Neuroreport* 11, 3677-3680.
- Viggiano, D., Grammatikopoulos, G. and Sadile, A. G. (2002). A morphometric evidence for a hyperfunctioning mesolimbic system in an animal model of ADHD. *Behav Brain Res* 130, 181-189. [http://dx.doi.org/10.1016/S0166-4328\(01\)00423-5](http://dx.doi.org/10.1016/S0166-4328(01)00423-5)
- Viggiano, D., Ruocco, L. A., Pignatelli, M. et al. (2003). Prenatal elevation of endocannabinoids corrects the unbalance between dopamine systems and reduces activity in the naples high excitability rats. *Neurosci Biobehav Rev* 27, 129-139. [http://dx.doi.org/10.1016/S0149-7634\(03\)00015-0](http://dx.doi.org/10.1016/S0149-7634(03)00015-0)
- Vincent, S. G., Waddell, A. E., Caron, M. G. et al. (2007). A murine model of hyperdopaminergic state displays altered respiratory control. *FASEB J* 21, 1463-1471. <http://dx.doi.org/10.1096/fj.06-7248com>
- Warton, F. L., Howells, F. M. and Russell, V. A. (2009). Increased glutamate-stimulated release of dopamine in substantia nigra of a rat model for attention-deficit/hyperactivity disorder – lack of effect of methylphenidate. *Metab Brain Dis* 24, 599-613. <http://dx.doi.org/10.1007/s11011-009-9166-1>
- Wells, A., Janes, A. and Liu, X. (2010). Medial temporal lobe functioning and structure in the spontaneously hypertensive rat: Comparison with Wistar-Kyoto normotensive and Wistar-Kyoto hypertensive strains. *Hippocampus* 20, 787-797. <http://dx.doi.org/10.1002/hipo.20681>
- Wheeler, T. L., Eppolito, A. K., Smith, L. N. et al. (2007). A novel method for oral stimulant administration in the neonate rat and similar species. *J Neurosci Meth* 159, 282-285. <http://dx.doi.org/10.1016/j.jneumeth.2006.07.019>
- Wickens, J. R., Macfarlane, J., Booker, C. and McNaughton, N. (2004). Dissociation of hypertension and fixed interval responding in two separate strains of genetically hypertensive rat. *Behav Brain Res* 152, 393-401. <http://dx.doi.org/10.1016/j.bbr.2003.10.023>
- Williams, J. and Dayan, P. (2005). Dopamine, learning, and impulsivity: A biological account of attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 15, 160-179. <http://dx.doi.org/10.1089/cap.2005.15.160>
- Williams, J., Sagvolden, G., Taylor, E. and Sagvolden, T. (2009). Dynamic behavioural changes in the spontaneously hyperactive rat: 1. Control by place, timing, and reinforcement rate. *Behav Brain Res* 198, 273-282. <http://dx.doi.org/10.1016/j.bbr.2008.08.044>
- Williams, J., Sagvolden, G., Taylor, E. and Sagvolden, T. (2009). Dynamic behavioural changes in the spontaneously hyperactive rat: 2. Control by novelty. *Behav Brain Res* 198, 283-290. <http://dx.doi.org/10.1016/j.bbr.2008.08.045>
- Williams, J., Sagvolden, G., Taylor, E. and Sagvolden, T. (2009). Dynamic behavioural changes in the spontaneously hyperactive rat: 3. Control by reinforcer rate changes and predictability. *Behav Brain Res* 198, 291-297. <http://dx.doi.org/10.1016/j.bbr.2008.08.046>
- Wu, L., Zhao, Q., Zhu, X. et al. (2010). A novel function of micro-RNA let-7d in regulation of galectin-3 expression in attention deficit hyperactivity disorder rat brain. *Brain Pathol* 20, 1042-1054. <http://dx.doi.org/10.1111/j.1750-3639.2010.00410.x>
- Wultz, B., Sagvolden, T., Moser, E. I. and Moser, M. B. (1990). The spontaneously hypertensive rat as an animal model of attention-deficit hyperactivity disorder: Effects of methylphenidate on exploratory behavior. *Behav Neural Biol* 53, 88-102. [http://dx.doi.org/10.1016/0163-1047\(90\)90848-Z](http://dx.doi.org/10.1016/0163-1047(90)90848-Z)
- Wultz, B. and Sagvolden, T. (1992). The hyperactive spontaneously hypertensive rat learns to sit still, but not to stop bursts of responses with short interresponse times. *Behav Genet* 22, 415-433. <http://dx.doi.org/10.1007/BF01066613>
- Yan, T. C., McQuillin, A., Thapar, A. et al. (2009). NK1 (TACR1) receptor gene 'knockout' mouse phenotype predicts genetic association with ADHD. *J Psychopharmacol* 24, 27-38. <http://dx.doi.org/10.1177/0269881108100255>
- Young, J. W., Crawford and N., Kelly, J. S. (2007). Impaired attention is central to the cognitive deficits observed in alpha 7 deficient mice. *Eur Neuropsychopharmacol* 17, 145-155. <http://dx.doi.org/10.1016/j.euroneuro.2006.03.008>
- Zhang, K., Davids, E., Tarazi, F. I. and Baldessarini, R. J. (2002). Effects of dopamine D (sub 4) receptor-selective antagonists on motor hyperactivity in rats with neonatal 6-hydroxydopamine lesions. *Psychopharmacology* 161, 100. <http://dx.doi.org/10.1007/s00213-002-1018-1>
- Zhang, K., Davids, E., Tarazi, F. I. and Baldessarini, R. J. (2002). Serotonin transporter binding increases in caudate-putamen and nucleus accumbens after neonatal 6-hydroxydopamine lesions in rats: Implications for motor hyperactivity. *Dev Brain Res* 137, 135-138. [http://dx.doi.org/10.1016/S0165-3806\(02\)00436-4](http://dx.doi.org/10.1016/S0165-3806(02)00436-4)
- Zhou, M., Rebholz, H., Brocia et al. (2010). Forebrain overexpression of CK1 δ leads to down-regulation of dopamine receptors and altered locomotor activity reminiscent of ADHD. *Proc Natl Acad Sci U S A* 107, 4401-4406. <http://dx.doi.org/10.1073/pnas.0915173107>
- Zhu, H. J., Appel, D. I., Peterson, Y. K. et al. (2010). Identification of selected therapeutic agents as inhibitors of carboxylesterase 1: Potential sources of metabolic drug interactions. *Toxicology* 270, 59-65. <http://dx.doi.org/10.1016/j.tox.2010.01.009>
- Zhuang, X., Oosting, R. S., Jones, S. R. et al. (2001). Hyperactivity and impaired response habituation in hyperdopaminergic mice. *Proc Natl Acad Sci U S A* 98, 1982-1987. <http://dx.doi.org/10.1073/pnas.98.4.1982>