

CURRICULUM VITAE

NAME Raul R. Gainetdinov, M.D., Ph.D.
DATE OF BIRTH September 1, 1964
CITIZENSHIP Russia

PRESENT POSITIONS:

Professor, Skolkovo Institute of Science and Technology (Skoltech), Skolkovo, Moscow District, Russia

Director, Institute of Translational Biomedicine, St. Petersburg State University, St. Petersburg, Russia

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MAJOR TOPICS OF RESEARCH

- Neuroscience
- Classical monoamines and trace amines in physiology and pathology
- Molecular mechanisms of action of psychotropic drugs
- Genetic animal models of brain disorders
- Molecular pharmacology

EDUCATION

1988 M.D.; 2nd Moscow Medical Institute, Moscow, Russia
1992 Ph.D. in Pharmacology; Institute of Pharmacology, Russian Academy of Medical Sciences (RAMS), Moscow, Russia

PROFESSIONAL EXPERIENCE

2015-present Director, Institute of Translational Biomedicine, St. Petersburg State University, St. Petersburg, Russia
2013-present Professor, Skolkovo Institute of Science and Technology (Skoltech), Skolkovo, Moscow District, Russia
2013-present Adjunct Associate Professor, Department of Cell Biology, Duke University, Durham, NC, USA
2013-2015 Professor, Faculty of Biology and Soil Sciences, St. Petersburg State University, St. Petersburg, Russia
2008-2015 Senior Researcher, Italian Institute of Technology (Istituto Italiano di Tecnologia) Genova, Italy
2006-2008 Associate Research Professor, Department of Cell Biology, Duke University, Durham, NC, USA
2000-2006 Assistant Research Professor, Department of Cell Biology, Duke University, Durham, NC, USA
1996-1999 Post-Doctoral Researcher, Department of Cell Biology, Duke University, Durham, NC, USA
1996 Visiting Scholar at the University of Uppsala, Sweden
1995-2004 Senior Scientist, Institute of Pharmacology, Moscow, Russia
1992-1995 Scientist, Institute of Pharmacology, Moscow, Russia
1992 Visiting Scholar at the University of Cagliari, Italy
1988-1992 Junior Scientist, Institute of Pharmacology, Moscow, Russia

PUBLICATIONS (total 213)

- 148 research articles
- 54 reviews and commentaries
- 11 book chapters

More than 400 presentations in conferences

Total citations: > 16,500; h-index: 64 (as of 28/09/2016; ISI Web of Science)

CONSULTING AND INDUSTRY EXPERIENCE

- Cortex Pharmaceuticals, USA (2000)
- Janssen Pharmaceutica, Belgium (2001)
- National Institute on Drug Abuse (NIDA) consultant meeting “VMAT2 Blockade and Methamphetamine” (Bethesda, MD, USA, 2003)
- Synaptic Pharmaceutical Corporation (Lundbeck Research USA, NJ, USA, 2005)
- Norak Biosciences (Xsira Pharmaceuticals, NC, USA, 2005)
- Research Triangle Institute (RTI, USA) (2006-2011)
- Co-founder of start-up biotech company Axitare, Inc (2007-2010, NC, USA)
- F. Hoffmann-La Roche Ltd., Basel, Switzerland (2008-present)
- Abbott Laboratories, Ludwigshafen, Germany (2010, 2011)
- Ono Pharmaceutical Co., Ltd., Japan (2011)
- Co-founder of start-up biotech company IllGene, Inc (2013, Moscow, Russia)
- Co-founder of start-up biotech company RegMedLab, Inc (2013, Moscow, Russia)
- Orion Corporation, Espoo, Finland (2015)
- Boehringer Ingelheim, Biberach, Germany (2015)

MEMBER OF THE EDITORIAL BOARD

Scientific Reports (Nature Publishing Group, London, UK); Neurotoxicity Research

AWARDS

1993 - Young investigator award from the International Society for Neurochemistry
1997 - Post-doctoral Research Award from the Tourette Syndrome Association, Inc.
2005 - Research Award from the Michael J. Fox Foundation for Parkinson's Research
2006 - Research Award from the Michael J. Fox Foundation for Parkinson's Research
2008 - Research Award from F. Hoffmann-La Roche Ltd., Basel, Switzerland
2009 - Research Award from Compagnia di San Paolo Fondazione, Torino, Italy
2011 - Research Award from F. Hoffmann-La Roche Ltd., Basel, Switzerland
2012 - Research Award from F. Hoffmann-La Roche Ltd., Basel, Switzerland
2013 - Elected Chair of the International Union of Basic and Clinical Pharmacology Committee on Receptor Nomenclature and Drug Classification (NC-IUPHAR) subcommittee for the Dopamine receptors family

PATENTS (issued)

1. Method for augmenting the effects of selective serotonin reuptake inhibitors. **US Patent No. 7,517,908, issued on April 14, 2009** (with Krishnan KRR, Caron MG, Zhang X, Beaulieu JM, Sotnikova TD).
2. Functional single nucleotide polymorphism in brain-specific tryptophan hydroxylase (Tph2) as a tool for diagnosis and treatment of neuropsychiatric disorders. **US Patent No. 7,585,627, issued on September 8, 2009** (with Caron MG, Zhang X, Beaulieu JM, Sotnikova TD, Krishnan RR, Schwartz DA, Burch LA, Williams RB).
3. Methods for identifying compounds that regulate beta-arrestin signaling complexes. I. **US Patent No. 7763437, issued on July 27, 2010** (with Caron MG, Beaulieu JM, Sotnikova TD, Marion S).
4. Methods for identifying compounds that regulate beta-arrestin signaling complexes. II. **US Patent No. 7999075, issued on August 16, 2011** (with Caron MG, Beaulieu JM, Sotnikova TD, Marion S).
5. Transgenic mice carrying functional single nucleotide polymorphisms in brain-specific tryptophan hydroxylase. **US Patent No. 8,124,831, issued on February 28, 2012** (with Caron MG, Zhang X, Beaulieu JM, Sotnikova TD).
6. Antiparkinsonian action of phenylisopropylamines. **US Patent No. 8,877,802, issued on November 4, 2014** (with Caron MG, Sotnikova TD).
7. Animal model of cholinergic dysfunction to evaluate cognitive enhancers and drugs that improve myasthenia. **US Patent 9,139,638, issued on September 22, 2015** (with Caron MG, Prado VF, Prado MA, Pereira GS, Castro BM).

LIST OF PUBLICATIONS

-2016-

1. Cichero E, Espinoza S, Tonelli M, Franchini S, Gerasimov AS, Sorbi C, **Gainetdinov RR**, Brasili L, Fossa P. A homology modelling-driven study leading to the discovery of the first mouse trace amine-associated receptor 5 (TAAR5) antagonists. *MEDCHEMCOMM*. 2016, 7, 2: 353-364.
2. Mikhailova MA, Bass CE, Grinevich VP, Chappell AM, Deal AL, Bonin KD, Weiner JL, **Gainetdinov RR**, Budygin EA. Optogenetically-induced tonic dopamine release from VTA-nucleus accumbens projections inhibits reward consummatory behaviors. *Neuroscience*. 2016, 333: 54-64.
3. Fox ME, Mikhailova MA, Bass CE, Takmakov P, **Gainetdinov RR**, Budygin EA, Wightman RM. Cross-hemispheric dopamine projections have functional significance. *Proc Natl Acad Sci U S A*. 2016, 113: 6985-90.
4. Fakhfour G, Khilghatyan J, Sukhanov I, **Gainetdinov RR**, Beaulieu JM. Dimensions of GSK3 Monoamine-Related Intracellular Signaling in Schizophrenia. Chapter 26 in book: *Modeling the Psychopathological Dimensions of Schizophrenia*. Amsterdam, Academic Press, 2016, pp 447-562.
5. Gurevich EV, **Gainetdinov RR**, Gurevich VV. Regulation of Dopamine-Dependent Behaviors by G Protein-Coupled Receptor Kinases. Chapter in book: *G Protein-Coupled Receptor Kinases*. Part of the series: Methods in Pharmacology and Toxicology. Springer, 2016, pp 237-269.
6. Illiano P, Lanzo A, Leo D, Paglione M, Zampi G, **Gainetdinov RR**, Di Schiavi E. A Caenorhabditis elegans model to study dopamine transporter deficiency syndrome. *Eur J Neurosci*. 2016 Aug 13. doi: 10.1111/ejn.13366. [Epub ahead of print] PubMed PMID: 27519790.
7. Efimova EV, **Gainetdinov RR**, Budygin EA, Sotnikova TD. Dopamine transporter mutant animals: a translational perspective. *J Neurogenet*. 2016 Mar; 30(1):5-15.
8. Gurevich EV, **Gainetdinov RR**, Gurevich VV. G protein-coupled receptor kinases as regulators of dopamine receptor functions. *Pharmacol Res*. 2016 Sep; 111:1-16.
9. Homberg JR, Kyzar EJ, Scattoni ML, Norton WH, Pittman J, Gaikwad S, Nguyen M, Poudel MK, Ullmann JF, Diamond DM, Kaluyeva AA, Parker MO, Brown RE, Song C, **Gainetdinov RR**, Gottesman II, Kalueff AV. Genetic and environmental modulation of neurodevelopmental disorders: Translational insights from labs to beds. *Brain Res Bull*. 2016 Jul; 125:79-91.
10. Homberg JR, Kyzar EJ, Nguyen M, Norton WH, Pittman J, Poudel MK, Gaikwad S, Nakamura S, Koshiha M, Yamanouchi H, Scattoni ML, Ullman JF, Diamond

DM, Kaluyeva AA, Parker MO, Klimenko VM, Apryatin SA, Brown RE, Song C, **Gainetdinov RR**, Gottesman II, Kalueff AV. Understanding autism and other neurodevelopmental disorders through experimental translational neurobehavioral models. *Neurosci Biobehav Rev.* 2016 Jun; 65:292-312.

11. Sukhanov I, Caffino L, Efimova EV, Espinoza S, Sotnikova TD, Cervo L, Fumagalli F, **Gainetdinov RR**. Increased context-dependent conditioning to amphetamine in mice lacking TAAR1. *Pharmacol Res.* 2016 Jan; 103:206-14.

-2015-

12. Lam VM, Espinoza S, Gerasimov AS, **Gainetdinov RR**, Salahpour A. In-vivo pharmacology of Trace-Amine Associated Receptor 1. *Eur J Pharmacol.* 2015 Sep 15; 763 (Pt B):136-42.
13. Alexander SP, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Transporters. *Br J Pharmacol.* 2015, 172: 6110-202.
14. Alexander SP, Fabbro D, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Enzymes. *Br J Pharmacol.* 2015, 172: 6024-109.
15. Alexander SP, Fabbro D, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Catalytic receptors. *Br J Pharmacol.* 2015, 172: 5979-6023.
16. Alexander SP, Cidlowski JA, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Nuclear hormone receptors. *Br J Pharmacol.* 2015, 172: 5956-78.
17. Alexander SP, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Other ion channels. *Br J Pharmacol.* 2015, 172: 5942-55.
18. Alexander SP, Catterall WA, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Voltage-gated ion channels. *Br J Pharmacol.* 2015, 172: 5904-41.

19. Alexander SP, Peters JA, Kelly E, Marrion N, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Ligand-gated ion channels. *Br J Pharmacol.* 2015, 172: 5870-903.
20. Alexander SP, Davenport AP, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: G protein-coupled receptors. *Br J Pharmacol.* 2015, 172: 5744-869.
21. Alexander SP, Kelly E, Marrion N, Peters JA, Benson HE, Faccenda E, Pawson AJ, Sharman JL, Southan C, Buneman OP, Catterall WA, Cidlowski JA, Davenport AP, Fabbro D, Fan G, McGrath JC, Spedding M, Davies JA; CGTP Collaborators (...**Gainetdinov RR**...). The Concise Guide to PHARMACOLOGY 2015/16: Overview. *Br J Pharmacol.* 2015, 172: 5729-43.
22. Chiellini G, Nesi G, Digiacomo M, Malvasi R, Espinoza S, Sabatini M, Frascarelli S, Laurino A, Cichero E, Macchia M, **Gainetdinov RR**, Fossa P, Raimondi L, Zucchi R, Rapposelli S. Design, Synthesis, and Evaluation of Thyronamine Analogues as Novel Potent Mouse Trace Amine Associated Receptor 1 (mTAAR1) Agonists. *J Med Chem.* 2015 Jun 25; 58(12):5096-107.
23. Espinoza S, Lignani G, Caffino L, Maggi S, Sukhanov I, Leo D, Mus L, Emanuele M, Ronzitti G, Harmeyer A, Medrihan L, Sotnikova TD, Chierigatti E, Hoener MC, Benfenati F, Tucci V, Fumagalli F, **Gainetdinov RR**. TAAR1 Modulates Cortical Glutamate NMDA Receptor Function. *Neuropsychopharmacology* 2015 Aug; 40(9): 2217-27.
24. Gurevich EV, Premont RT, **Gainetdinov RR**. G protein-coupled receptor kinases: from molecules to diseases. *FASEB J.* 2015 Feb; 29(2):361-4.
25. Cotter R, Pei Y, Mus L, Harmeyer A, **Gainetdinov RR**, Hoener MC, Canales JJ. The trace amine-associated receptor 1 modulates methamphetamine's neurochemical and behavioral effects. *Front Neurosci.* (2015) 9: 39.
26. Espinoza S, Ghisi V, Emanuele M, Leo D, Sukhanov I, Sotnikova TD, Chierigatti E, **Gainetdinov RR**. Postsynaptic D2 dopamine receptor supersensitivity in the striatum of mice lacking TAAR1. *Neuropharmacology* (2015) 93: 308-313.
27. Beaulieu JM, Espinoza S, **Gainetdinov RR**. Dopamine receptors - IUPHAR Review 13. *Br J Pharmacol.* (2015) 172: 1-23.
28. Masoud ST, Vecchio LM, Bergeron Y, Hossain MM, Nguyen LT, Bermejo MK, Kile B, Sotnikova TD, Siesser WB, **Gainetdinov RR**, Wightman RM, Caron MG, Richardson JR, Miller GW, Ramsey AJ, Cyr M, Salahpour A. Increased expression of the dopamine transporter leads to loss of dopamine neurons,

oxidative stress and L-DOPA reversible motor deficits. *Neurobiol Dis.* (2015) 74: 66-75.

-2014-

29. Sukhanov I, Espinoza S, Yakovlev DS, Hoener MC, Sotnikova TD, **Gainetdinov RR**. TAAR1-dependent effects of apomorphine in mice. *Int J Neuropsychopharmacol* (2014) 17: 1683-1693.
30. Sotnikova TD and **Gainetdinov RR**. Chapter 15: ADHD. In book: *Handbook of Behavioral Genetics of the Mouse* (Eds. Pietropaolo S., Crusio W.E. and Sluyter F.) Cambridge University Press, UK, 2014, pp. 164-172.
31. Cichero E, Espinoza S, Franchini S, Guariento S, Brasili L, **Gainetdinov RR**, Fossa P. Further Insights Into the Pharmacology of the Human Trace Amine-Associated Receptors: Discovery of Novel Ligands for TAAR1 by a Virtual Screening Approach. *Chem Biol Drug Des* (2014) 84: 712-720.
32. Steinkellner T, Mus L, Eisenrauch B, Constantinescu A, Leo D, Konrad L, Rickhag M, Sørensen G, Efimova EV, Kong E, Willeit M, Sotnikova TD, Kudlacek O, Gether U, Freissmuth M, Pollak DD, **Gainetdinov RR**, Sitte HH. In Vivo Amphetamine Action is Contingent on α CaMKII. *Neuropsychopharmacology* (2014) 39: 2681-2693.
33. Ronzitti G, Bucci G, Emanuele M, Leo D, Sotnikova TD, Mus LV, Soubrane CH, Dallas ML, Thalhammer A, Cingolani LA, Mochida S, **Gainetdinov RR**, Stephens GJ, Chiergatti E. Exogenous α -Synuclein Decreases Raft Partitioning of Cav2.2 Channels Inducing Dopamine Release. *J Neurosci* (34):10603-15.
34. Dell'Anno MT, Caiazzo M, Leo D, Dvoretzkova E, Medrihan L, Colasante G, Giannelli S, Theka I, Russo G, Mus L, Pezzoli G, **Gainetdinov RR**, Benfenati F, Taverna S, Dityatev A, Broccoli V. Remote control of induced dopaminergic neurons in parkinsonian rats. *J Clin Invest* (2014) 124: 3215-29.
35. Daigle TL, Ferris MJ, **Gainetdinov RR**, Sotnikova TD, Urs NM, Jones SR, Caron MG. Selective Deletion of GRK2 Alters Psychostimulant-Induced Behaviors and Dopamine Neurotransmission. *Neuropsychopharmacology* (2014) 39: 2450-62.
36. Ferris MJ, Milenkovic M, Liu S, Mielnik CA, Beerepoot P, John CE, España RA, Sotnikova TD, **Gainetdinov RR**, Borgland SL, Jones SR, Ramsey AJ. Sustained N-methyl-d-aspartate receptor hypofunction remodels the dopamine system and impairs phasic signaling. *Eur J Neurosci* (2014) 40: 2255-63.
37. Pei Y, Lee J, Leo D, **Gainetdinov RR**, Hoener MC, Canales JJ. Activation of the trace amine-associated receptor 1 prevents relapse to cocaine seeking. *Neuropsychopharmacology* (2014) 39: 2299-308.

38. Cagniard B, Sotnikova TD, **Gainetdinov RR**, Zhuang X. The dopamine transporter expression level differentially affects responses to cocaine and amphetamine. *J Neurogenet* (2014) 28:112-21.
39. Marion S, Urs NM, Peterson SM, Sotnikova TD, Beaulieu JM, **Gainetdinov RR**, Caron MG. Dopamine D2 receptor relies upon PPM/PP2C protein phosphatases to dephosphorylate huntingtin protein. *J Biol Chem* (2014) 289:11715-24.
40. Leo D, Mus L, Espinoza S, Hoener MC, Sotnikova TD, **Gainetdinov RR**. Taar1-Mediated Modulation Of Presynaptic Dopaminergic Neurotransmission: Role Of D2 Dopamine Autoreceptors. *Neuropharmacology* (2014) 81:283-91.
41. Lavoie J, Illiano P, Sotnikova TD, **Gainetdinov RR**, Beaulieu JM, Hébert M. The Electroretinogram as a Biomarker of Central Dopamine and Serotonin: Potential Relevance to Psychiatric Disorders. *Biol Psychiatry* (2014) 75: 479-86.
- 2013-**
42. Medvedev IO, Ramsey AJ, Masoud ST, Bermejo MK, Urs N, **Sotnikova TD**, Beaulieu JM, Gainetdinov RR, Salahpour A. D1 Dopamine Receptor Coupling to PLC β Regulates Forward Locomotion in Mice. *J Neurosci.* (2013) 33:18125-33.
43. Lignani G, Ferrea E, Difato F, Amarù J, Ferroni E, Lugarà E, Espinoza S, **Gainetdinov RR**, Baldelli P, Benfenati F. Long-term optical stimulation of channelrhodopsin-expressing neurons to study network plasticity. *Front Mol Neurosci.* (2013) 6: 22.
44. Espinoza S, Masri B, Salahpour A, **Gainetdinov RR**. BRET approaches to characterize dopamine and TAAR1 receptor pharmacology and signaling. *Methods Mol Biol* (2013) 964: 107-122.
45. Leo D and **Gainetdinov RR**. Transgenic mouse models for ADHD. *Cell Tissue Res.* (2013) 354: 259-71.
46. Theka I, Caiazza M, Dvoretzkova E, Leo D, Ungaro F, Curreli F, Managò F, Pezzoli G, **Gainetdinov RR**, Dityatev A and Broccoli V. Rapid generation of functional dopaminergic neurons from human iPS cells through a single step procedure employing cell lineage transcription factors. *Stem Cells Translational Medicine* (2013) 2: 473-9.
47. Cichero E, Espinoza S, **Gainetdinov RR**, Brasili L, Fossa P. Insights into the structure and pharmacology of the human trace amine-associated receptor 1 (hTAAR1): homology modeling and docking studies. *Chem Biol Drug Des* (2013) 81: 509-16.
48. Siesser WB, Sachs BD, Ramsey AJ, Sotnikova TD, Beaulieu JM, Zhang X, Caron MG, **Gainetdinov RR**. Chronic SSRI treatment exacerbates serotonin deficiency in humanized Tph2 mutant mice. *ACS Chemical Neuroscience* (2013) 4: 84-88.

2012-

49. Espinoza S, Managò F, Leo D, Sotnikova TD, **Gainetdinov RR**. Role of catechol-O-methyltransferase (COMT)-dependent processes in Parkinson's disease and L-DOPA treatment. *CNS & Neurological Disorders - Drug Targets* (2012) 11: 251-63.
50. Managò F, Espinoza S, Salahpour A, Sotnikova TD, Caron MG, Premont RT, **Gainetdinov RR**. The role of GRK6 in animal models of Parkinson's Disease and L-DOPA treatment. *Sci Rep.* (2012) 2: 301.
51. Revel FG, Moreau JL, **Gainetdinov RR**, Ferragud A, Velázquez-Sánchez C, Sotnikova TD, Morairty SR, Harmeyer A, Groebke Zbinden K, Norcross RD, Bradaia A, Kilduff TS, Biemans B, Pouzet B, Caron MG, Canales JJ, Wallace TL, Wettstein JG, Hoener MC. Trace amine-associated receptor 1 partial agonism reveals novel paradigm for neuropsychiatric therapeutics. *Biol Psychiatry* (2012) 72: 934-42.
52. Salahpour A, Espinoza S, Masri B, Lam V, Barak LS, **Gainetdinov RR**. BRET biosensors to study GPCR biology, pharmacology, and signal transduction. *Front Endocrinol (Lausanne)* (2012) 3: 105.
53. Meck WH, Cheng RK, MacDonald CJ, **Gainetdinov RR**, Caron MG, and Çevik MO. Gene-dose dependent effects of methamphetamine on interval timing in dopamine-transporter knockout mice. *Neuropharmacology* (2012) 62: 1221-9.

-2011-

54. Beaulieu JM, Del'Guidice T, Sotnikova TD, Lemasson M, **Gainetdinov RR**. Beyond cAMP: the regulation of Akt and GSK3 by dopamine receptors. *Frontiers in Molecular Neuroscience* (2011) 4: 38.
55. Espinoza S, Salahpour A, Masri B, Sotnikova TD, Messa M, Barak LS, Caron MG, **Gainetdinov RR**. Functional interaction between Trace Amine Associated Receptor 1 (*TAAR1*) and dopamine D2 receptor. *Mol Pharmacol* (2011) 80: 416-25.
56. Guzman MS, De Jaeger X, Raulic S, Souza IA, Li AL, Schmid S, Menon RS, **Gainetdinov RR**, Caron MG, Bartha R, Prado VF, Prado MAM. Elimination of the vesicular acetylcholine transporter in the striatum reveals regulation of behaviour by cholinergic-glutamatergic co-transmission. *PLOS Biology* (2011) 9: e1001194.
57. Caiazzo M, Dell'anno MT, Dvoretzkova E, Lazarevic D, Taverna S, Leo D, Sotnikova TD, Menegon A, Roncaglia P, Colciago G, Russo G, Carninci P, Pezzoli G, **Gainetdinov RR**, Gustincich S, Dityatev A, Broccoli V. Direct generation of functional dopaminergic neurons from mouse and human fibroblasts. *Nature* (2011) 476: 224-7.

58. Herrmann R, Heflin SJ, Hammond T, Lee B, Wang J, **Gainetdinov RR**, Caron MG, Eggers ED, Frishman LJ, McCall MA, Arshavsky VY. Rod vision is controlled by dopamine-dependent sensitization of rod bipolar cells by GABA. *Neuron* (2011) 72: 101-10.
59. Revel FG, Moreau JL, **Gainetdinov RR**, Bradaia A, Sotnikova TD, Mory R, Durkin S, Zbinden KG, Norcross R, Meyer CA, Metzler V, Chaboz S, Ozmen L, Trube G, Pouzet B, Bettler B, Caron MG, Wettstein JG, Hoener MC. TAAR1 activation modulates monoaminergic neurotransmission, preventing hyperdopaminergic and hypoglutamatergic activity. *Proc Natl Acad Sci U S A* (2011) 108: 8485-90.
60. Zhang X, Nicholls PJ, Laje G, Sotnikova TD, **Gainetdinov RR**, Albert PR, Rajkowska G, Stockmeier CA, Speer MC, Steffens DC, Austin MC, McMahon FJ, Krishnan KR, Garcia-Blanco MA, Caron MG. A functional alternative splicing mutation in human tryptophan hydroxylase-2. *Mol Psychiatry* (2011) 16: 1169-76.
61. Omenetti A, Yang L, **Gainetdinov RR**, Guy CD, Choi SS, Chen W, Caron MG, Diehl AM. Paracrine modulation of cholangiocyte serotonin synthesis orchestrates biliary remodeling in adults. *Am J Physiol Gastrointest Liver Physiol* (2011) 300: G303-15.
62. Beaulieu JM and **Gainetdinov RR**. The Physiology, Signaling and Pharmacology of Dopamine Receptors. *Pharmacological Reviews* (2011) 63: 182-217.

-2010-

63. **Gainetdinov RR**. Strengths and limitations of genetic models of ADHD. *ADHD Atten Def Hyp Disord* (2010) 2:21–30.
64. Sotnikova TD, Beaulieu JM, Espinoza S, Masri B, Zhang X, Salahpour A, Barak LS, Caron MG, **Gainetdinov RR**. The dopamine metabolite 3-methoxytyramine is a neuromodulator. *PLoS One* (2010) 5: e13452.
65. Siesser WB, Zhang X, Jacobsen JP, Sotnikova TD, **Gainetdinov RR**, Caron MG. Tryptophan Hydroxylase 2 Genotype Determines Brain Serotonin Synthesis but Not Tissue Content in C57Bl/6 and BALB/c Congenic Mice. *Neurosci Lett* (2010) 481: 6-11.
66. Dzirasa K, Phillips HW, Sotnikova TD, Salahpour A, Kumar S, **Gainetdinov RR**, Caron MG, Nicolelis MA. Noradrenergic control of cortico-striato-thalamic and mesolimbic cross-structural synchrony. *J Neurosci* (2010) 30: 6387-97.
67. Caron MG and **Gainetdinov RR**. Role of Dopamine Transporters in Neuronal Homeostasis. In book: *Dopamine Handbook* (Eds. L. Iversen, S. Iversen, S. Dunnett, A. Bjorklund) Oxford University Press, New York, USA, 2010, pp. 88-99.

-2009-

68. Sotnikova TD, Caron MG, **Gainetdinov RR**. Trace amine associated receptors (TAARs) as emerging therapeutic targets. *Mol Pharmacol* (2009) 76: 229-35.
69. Beaulieu JM, **Gainetdinov RR**, Caron MG. Akt/GSK3 Signaling in the Action of Psychotropic Drugs. *Annu Rev Pharmacol Toxicol* (2009) 49: 327-47.
70. Xu TX, Sotnikova TD, Liang C, Zhang J, Jung JU, Spealman RD, **Gainetdinov RR**, Yao WD. Hyperdopaminergic tone erodes prefrontal long-term potential via a D2 receptor-operated protein phosphatase gate. *J Neurosci* (2009) 29: 14086-99.
71. Dzirasa K, Ramsey AJ, Takahashi DY, Stapleton J, Potes JM, Williams JK, **Gainetdinov RR**, Sameshima K, Caron MG, Nicolelis MA. Hyperdopaminergia and NMDA receptor hypofunction disrupt neural phase signaling. *J Neurosci* (2009) 29: 8215-24.
72. Raehal KM, Schmid CL, Medvedev IO, **Gainetdinov RR**, Premont RT, Bohn LM. Morphine-induced physiological and behavioral responses in mice lacking G protein-coupled receptor kinase 6. *Drug Alcohol Depend* (2009) 104: 187-96.
73. Dzirasa K, Santos LM, Ribeiro S, Stapleton J, **Gainetdinov RR**, Caron MG, Nicolelis MA. Persistent hyperdopaminergia decreases the peak frequency of hippocampal theta oscillations during quiet waking and REM sleep. *PLoS ONE* (2009) 4: e5238.
74. de Castro BM, Pereira GS, Magalhães V, Rossato JI, De Jaeger X, Martins-Silva C, Leles B, Lima P, Gomez MV, **Gainetdinov RR**, Caron MG, Izquierdo I, Cammarota M, Prado VF, Prado MA. Reduced expression of the vesicular acetylcholine transporter causes learning deficits in mice. *Genes Brain Behav* (2009) 8: 23-35.
75. Ghisi V, Ramsey AJ, Masri B, **Gainetdinov RR**, Caron MG, Salahpour A. Reduced D2-mediated signaling activity and trans-synaptic upregulation of D1 and D2 dopamine receptors in mice overexpressing the dopamine transporter. *Cell Signal* (2009) 21: 87-94.
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