

CIRRICULUM VITAE

ALAN KANIA

EDUCATION

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| 04.2020 | honours PhD degree in the field of natural sciences, discipline: biological sciences at Jagiellonian University, Kraków, Poland |
| 2014 - 2020 | PhD studies in Biology, Institute of Zoology, Department of Biology and Earth Sciences, Jagiellonian University, Kraków, Poland |
| 2013 - 2014 | Master's studies in Neuroscience, Institute of Zoology, Department of Biology and Earth Sciences, Jagiellonian University, Kraków, Poland |
| 07.2013 | honours Bachelor's degree in Neuroscience at Jagiellonian University |
| 2010 - 2013 | Bachelor's studies in Neuroscience, Institute of Zoology, Department of Biology and Earth Sciences, Jagiellonian University, Kraków, Poland |

INTERNSHIPS, TRAININGS, SCHOOLS AND WORKSHOPS

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| 05.-11.2019 | Internship at the School of Pharmacy, Pharmacology Unit, University of Camerino, Camerino, Italy supervisor: Carlo Cifani: carlo.cifani@unicam.it |
| 06.-09.2017 | Internship at the Peptide Neurobiology Laboratory, Neuropeptides Division of The Florey Institute of Neuroscience, Melbourne, Victoria, Australia supervisor: Andrew L. Gundlach: andrew.gundlach@florey.edu.au |
| 09.2015 | PolLASA workshop on using animals in research and teaching, Faculty of Biology and Earth Sciences, Jagiellonian University, Kraków, Poland |
| 07. - 09.2013 | Internship at Laboratory of Neuroscience Medical University, Wrocław, Poland –involvement in project on modulation of GABA _A currents <i>in vitro</i> |
| 08.2012 | Internship at NeuroRepair Department, Mossakowski Medical Research Centre, Polish Academy of Sciences, Warsaw, Poland |
| 07.2012 | participant of VLTP IBRO Summerschool in Kraków |

GRANTS

- **7th Framework Programme - NEUREN - Neuroscience Research Exchange Network**, System neurobiology of neurological disorders, (Valence, Tetuan, Krakow, Melbourne), (grant holder: dr hab. Anna Błasiak) – **grant executor in 2017**
- **National Science Centre Poland doctoral scholarship, ETIUDA V**, The involvement of the hypothalamic paraventricular nucleus in the neuronal mechanism of relaxin-3 orexigenic action in the rat – **grant holder 2017-2020**
- **National Science Centre Poland Grant, OPUS XII**, Involvement of dopaminergic system in susceptibility to eating disorders induced by maternal separation stress (grant holder: prof. dr hab. Grzegorz Hess) – **grant executor 2017-2018**
- **National Science Centre Poland Grant, HARMONIA VI**, Role of heme oxygenase 1 in cardiomyocyte differentiation from induced pluripotent stem cells (HOx-Card) (grant holder: prof. dr hab. Józef Dulak), – **grant executor 2015-2018**
- **Polish Ministry of Science and Higher Education Grant, Diamentowy grant III**, Role of relaxin-3 in control of feeding and stress-induced eating disorders in female rats – **grant holder 2014-2019**
- **National Science Centre Poland Grant, SONATA III** Neuronal mechanisms of peptidergic regulation of stress-induced feeding (grant holder: dr Anna Błasiak) – **grant executor 2013-2016**

SCHOLARSHIPS AND AWARDS

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| 11.2019 | award for the best poster presentation at 39 th National Congress of Italian Society for Pharmacology, Florence, Italy |
| 06.2018 | FENS Travel Grant for the 11 th FENS Forum 2018, Berlin, Germany |
| 04.2018 | award for the best oral presentation at NEURONUS 2018 IBRO Neuroscience Forum, Krakow Poland |
| 2017 - 2018 | Rector's scholarship for the best PhD students for academic year 2016/17 |

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| 06.2017 | Mediterranean Neuroscience Society Travel Grant for the Mediterranean Neuroscience Society Meeting 2017, Malta |
| 2015 - 2016 | Rector's scholarship for the best PhD students for academic year 2014/15 |
| 07.2015 | IBRO Travel Grant for the 9th IBRO World Congress in Neuroscience, Rio de Janeiro, Brazil |
| 12.2014 | Minister of Science and Higher Education's scholarship for the best students for academic year 2014/2015 |
| 2014 - 2015 | Rector's scholarship for the best PhD students for academic year 2014/15 |
| 2013 - 2014 | Rector's scholarship for the best students for academic year 2012/13 |
| 2012 - 2013 | Rector's scholarship for the best students for academic year 2011/12 |
| 2011 - 2012 | Rector's scholarship for the best students for academic year 2010/11 |

RESEARCH TECHNIQUES USED

- extracellular multielectrode recordings- acute rat brain slices, and related analysis
- whole-cell patch clamp recordings – acute rat brain slices and cell cultures, and related analysis
- rat stereotactic surgery – cannulae implantation and tracer injections
- brain tissue immunohistochemistry – light, fluorescent and confocal microscopy, and related analysis
- behavioural experiments using rat model of binge eating behaviour

PUBLICATIONS

- **Alan Kania**, Agata Szlaga, Patryk Sambak, Anna Gugula, Ewa Blasiak, Maria Vittoria Micioni Di Bonaventura, Mohammad Akhter Hossain, Carlo Cifani, Grzegorz Hess, Andrew L. Gundlach, Anna Blasiak: *RLN3/RXFP3 Signaling in the PVN Inhibits Magnocellular Neurons via M-like Current Activation and Contributes to Binge Eating Behavior*. Journal of Neuroscience 40 (28) 5362-5375; DOI: 10.1523/JNEUROSCI.2895-19.2020
- **Alan Kania**, Patryk Sambak, Anna Gugula, Agata Szlaga, Zbigniew Soltys, Tomasz Blasiak, Grzegorz Hess, Zenon Rajfur, Anna Blasiak: *Electrophysiology and distribution of oxytocin and vasopressin neurons in the hypothalamic paraventricular nucleus: a study in male and female rats*. Brain Structure and Function 12/2019; DOI:10.1007/s00429-019-01989-4
- Azadeh Sabetghadam, Agnieszka Grabowiecka-Nowak, **Alan Kania**, Anna Gugula, Ewa Blasiak, Tomasz Blasiak, Sherie Ma, Andrew L. Gundlach, Anna Blasiak: *Melanin-concentrating hormone and orexin systems in rat nucleus incertus: Dual innervation, bidirectional effects on neuron activity, and differential influences on arousal and feeding*. Neuropharmacology 139:238–256; DOI: 10.1016/j.neuropharm.2018.07.004
- Joanna Kula, Anna Gugula, Anna Blasiak, Bartosz Bobula, Joanna Danielewicz, **Alan Kania**, Grzegorz Tytko, Grzegorz Hess: *Diverse action of repeated corticosterone treatment on synaptic transmission, neuronal plasticity, and morphology in superficial and deep layers of the rat motor cortex*. Pflügers Archiv - European Journal of Physiology 07/2017; 469(11); DOI:10.1007/s00424-017-2036-5
- **Alan Kania**, Anna Czerw, Agnieszka Grabowiecka, Camila de Ávila, Tomasz Blasiak, Zenon Rajfur, Marian H Lewandowski, Grzegorz Hess, Elena Timofeeva, Andrew L Gundlach, Anna Blasiak: *Inhibition of oxytocin and vasopressin neuron activity in rat hypothalamic paraventricular nucleus by relaxin-3/RXFP3 signalling*. The Journal of Physiology 01/2017; DOI:10.1113/JP273787
- Anna Blasiak, Marcin Siwiec, Agnieszka Grabowiecka, Tomasz Blasiak, Anna Czerw, Ewa Blasiak, **Alan Kania**, Zenon Rajfur, Marian H Lewandowski, Andrew L Gundlach: *Excitatory orexinergic innervation of rat nucleus incertus - Implications for ascending arousal, motivation and feeding control*. Neuropharmacology 08/2015; DOI:10.1016/j.neuropharm.2015.08.014
- Marta Magdalena Czyzewska, Lukasz Chrobok, **Alan Kania**, Magdalena Jatczak, Federica Pollastro, Giovanni Appendino, Jerzy Wladyslaw Mozrzyk: *Dietary Acetylenic Oxylinipin Falcarinol Differentially Modulates GABA(A) Receptors*. Journal of Natural Products 12/2014; 77(12); DOI:10.1021/np500615j
- **Alan Kania**, Marian H Lewandowski, Anna Blasiak: *Relaksyna-3 i receptory rodziny peptydów relaksynowych – od struktury po funkcje nowo odkrytego układu mózgowia ssaków. [Relaxin-3 and relaxin family peptide receptors--from structure to functions of a newly discovered mammalian brain system]*. Postępy Higieny i Medycyny Doświadczalnej (Advances in Hygiene and Experimental Medicine) 01/2014; 68; DOI:10.5604/17322693.1110163

CONFERENCES

- 07.2020 1st author of a poster: '*Relaxin-3/RXFP3 signalling in the PVN inhibits magnocellular neurosecretory neurons via M-like current activation and contributes to binge eating behaviour*' at FENS Virtual Forum 2020, Glasgow, United Kingdom
- 11.2019 1st author of a poster: '*Relaxin-3 signalling in paraventricular nucleus of hypothalamus– pharmacological evidence for M-like potassium current activation.*' at 39th National Congress of Italian Society for Pharmacology, Florence, Italy
- 09.2019 author of a poster: '*Role of heme oxygenase-1 in maturation and binucleation of cardiomyocytes derived from human induced pluripotent stem cells.*' at Eurobiotech 2019, 7th Central European Congress of Life Science, Krakow, Poland 2019
- 06.2019 author of a poster: '*Modeling of cardiomyopathy in Duchenne muscular dystrophy with a use of isogenic hiPSC-derived cardiomyocytes.*' at the 44th FEBS Congress, Krakow, Poland, 2019
- 06.2019 author of a poster: '*Maturity of human cardiomyocytes derived from induced pluripotent stem cells lacking heme oxygenase-1.*' at the 44th FEBS Congress, Krakow, Poland, 2019
- 02.2019 author of a poster: '*3D cardiac organoids for studying multinucleation of human cardiomyocytes derived from induced pluripotent stem cells lacking heme oxygenase-1.*' at Stem Cells & Organoids in development & Disease, Amsterdam, Netherlands, 2019
- 10.2018 author of a poster: '*Heme oxygenase-1 modulates the properties of human induced pluripotent stem cells-derived cardiomyocytes.*' at Changing the Face of Modern Medicine: Stem Cell and Gene Therapy jointly organized by ESGCT, ISSCR, SFTCG, Lausanne, Switzerland, 2018
- 09.2018 author of a poster: '*CRISPR/Cas9 editing of heme oxygenase-1 affects cardiomyocytes differentiated from human induced pluripotent stem cells.*' at 3rd BIO Congress, Gdansk, Poland
- 07.2018 1st author of a poster: '*Relaxin-3 action in paraventricular nucleus of hypothalamus– searching for ionic mechanism of RXFP3-induced inhibition and source of relaxin-3 in hypothalamus of male and female rats.*' at 11th FENS Forum 2018, Berlin, Germany
- 05.2018 co-author of a lecture: '*Relaxin3 modulation of behavior, from circadian activity to arousal.*' at Workshop on New Tools to Study Cognition and Emotion, Morella, Spain
- 04.2018 author of a poster: '*Lack of heme oxygenase-1 affects electrophysiological properties of cardiomyocytes derived from human induced pluripotent stem cells.*' at Frontiers in CardioVascular Biology 2018, European Society of Cardiology, Wien, Austria
- 04.2018 oral presentation: '*Searching for neuronal mechanism of neuropeptide's orexigenic action - relaxin-3 signalling in paraventricular nucleus of hypothalamus.*' at NEURONUS 2018 IBRO Neuroscience Forum, Kraków, Poland
- 09.2017 author of a poster: '*In search of ionic mechanism of inhibitory effects of RXFP3 activation on PVN magnocellular neurons.*' at Aspects of Neuroscience 2017, Warsaw, Poland
- 09.2017 author of a poster: '*Sex differences and electrophysiology: magnocellular paraventricular nucleus neurons in vitro studies*' at Aspects of Neuroscience 2017, Warsaw, Poland
- 09.2017 co-author of a lecture: '*Role of heme oxygenase 1 in differentiation of human pluripotent stem cells to cardiomyocytes*' at Eurobiotech 2017, 6th Central European Congress of Life Science, Kraków, Poland
- 08.2017 author of a poster: '*Repeated corticosterone treatment increases thin spine density in pyramidal neurons of deep layers of the rat primary motor cortex.*' at 13th International Congress of the Polish Neuroscience Society, Warsaw, Poland
- 06.2017 1st author of a poster: '*Inhibitory effect of RXFP3 activation on magnocellular PVN neurons in vitro - a potential neuronal mechanism of orexigenic relaxin-3 action in male and female rats.*' at Mediterranean Neuroscience Society Meeting 2017, Malta
- 05.2017 author of a poster: '*Differentiation of induced pluripotent stem cells (iPSCs) into inhibitory GABA interneurons.*' at Progress in Developmental Biology, Kraków, Poland
- 05.2017 author of a poster: '*Human induced pluripotent stem cells in disease modeling and regenerative medicine.*' at Progress in Developmental Biology, Kraków, Poland
- 05.2017 author of a poster: '*Neuronalny mechanizm oreksygenicznego (pobudzającego apetyt) działania relaksyny-3. [Neuronal mechanism of orexigenic action of relaxin-3.]*' at student conference NeuroMania, Torun, Poland
- 05.2017 author of a poster: '*Neuronal mechanism of relaxin-3 orexigenic action*' at 2nd Nencki symposium on the brain 'Neurons in action', Warsaw, Poland

- 05.2017 author of a poster: *'Neuronalny mechanizm oreksygenicznego (pobudzającego apetyt) działania relaksyny-3.'* [Neuronal mechanism of orexigenic action of relaxin-3.] at student conference SeMPowisko 2017, Kraków, Poland
- 11.2016 oral presentation: *'Neuronal mechanism of appetite control: How a glass pipette helps to understand food intake'* at NeuronLine: Current advances in experimental neuroscience, Kraków, Poland
- 07.2016 1st author of a poster: *'Relaxin-3 inhibits magnocellular neurons in the hypothalamic paraventricular nucleus (PVN) - electrophysiological and immunohistochemical studies in rat.'* at 10th FENS Forum of Neuroscience, Kopenhaga, Dania
- 06.2016 oral presentation: *'Relaxin-3 inhibits magnocellular neurons in the hypothalamic paraventricular nucleus (PVN) - electrophysiological studies in rat.'* at 10th Conference on Electrophysiological Techniques in Bioelectricity Research: from Ion Channels to Neural Networks, Kraków, Poland
- 04.2016 1st author of a poster: *'Unravelling the mechanisms of appetite control: relaxin-3 signalling in hypothalamic paraventricular nucleus of the rat.'* at the NEURONUS 2016 IBRO & IRUN Neuroscience Forum, Kraków, Poland
- 09.2015 co-author of a lecture: *'Interactions of relaxin-3 and other neuropeptide systems regulating arousal and feeding in rats.'* at 7th International Conference on Relaxin and Related Peptides, Kuching, Malaysia
- 09.2015 1st author of a poster: *'Relaxin-3 in the hypothalamic paraventricular nucleus (PVN) of rat. Electrophysiological approach to understand the sex-dependent relations between stress and feeding.'* at the 12th International Congress of the Polish Neuroscience Society, Gdańsk, Poland
- 08.2015 author of a poster: *'Characterisation of the GABA projection neurons in the nucleus incertus (NI) and their target GABA and non-GABA neurons in forebrain – Insights from co-expressed peptide systems.'* at the 2015 Gordon Research Conference on Inhibition in the CNS, Lewistown, Maine, USA
- 07.2015 1st author of a poster: *'Neural interfaces of stress and feeding: Electrophysiological studies of relaxin-3/RXFP3 signalling in the hypothalamic paraventricular nucleus (PVN) of the rat.'* at the 9th IBRO World Congress in Neuroscience, Rio de Janeiro, Brazil
- 06.2015 oral presentation: *'Electrophysiological studies of relaxin-3/RXFP3 signalling in the hypothalamic paraventricular nucleus.'* at the Progress in biomedicine and neuromedicine, Kraków, Poland
- 06.2015 2nd author of a poster: *'Relaxin-3/RXFP3 networks in food intake and stress responses – neural mechanisms underlying behavioural effects.'* at the 24th Annual Meeting of the International Behavioral Neuroscience Society, Victoria, British Columbia, Canada
- 04.2015 1st author of a poster: *'Relaxin-3/RXFP3 signalling in the paraventricular nucleus of hypothalamus (PVN) of rats – insights into the sexual differences in stress-related food intake.'* at the NEURONUS 2014 IBRO&IRUN Neuroscience Forum, Kraków, Poland
- 08.2014 co-author of a lecture: *'Regulation of nucleus incertus (relaxin-3) neurons by peptide and hormone inputs and impact of relaxin-3 receptor activation on characterized hypothalamic neurons.'* at the The Annual Scientific Meeting of the Endocrine Society of Australia and the Society for Reproductive Biology, Melbourne, Australia
- 07.2014 1st author of a poster: *'Activation of relaxin-3 receptors (RXFP3) on hypothalamic paraventricular nucleus (PVN) neurons in the rat in vitro.'* at the 9th FENS Forum of Neuroscience, Milan, Italy.
- 04.2014 1st author of a poster: *'Direct action of relaxin-3 receptor (RXFP3) agonist on hypothalamic paraventricular nucleus (PVN) neurons in the rat - in vitro patch clamp study.'* at the NEURONUS 2012 IBRO&IRUN Neuroscience Forum, Kraków, Poland.
- 04.2014 author of a poster: *'Falcarinol influences GABAergic currents mediated by different types of receptors.'* at the NEURONUS 2012 IBRO&IRUN Neuroscience Forum, Kraków, Poland.
- 11.2013 oral presentation: *'Who eats whom. The relationship between stress and eating behaviour.'* at the at the 3rd International Student's Conference 'Aspects of Neuroscience', Warsaw, Poland
- 09.2013 1st author of a poster: *'Relaxin-3/RXFP3 Signalling in Rat Paraventricular Nucleus - Novel Element in Neural Control of Feeding.'* at the 11th International Congress of the Polish Neuroscience Society, Poznan, Poland
- 05.2013 1st author of a poster: *'Role of Relaxin-3/RXFP3 Signalling in Neural Control of Feeding – in vitro patch clamp study.'* at the NEURONUS 2012 IBRO&IRUN Neuroscience Forum, Kraków, Poland.

OTHER ACTIVITIES

- 2019 - student member of Italian Society of Pharmacology
- 2013 - student member of Polish Neuroscience Society and Federation of European Neuroscience Societies
- 2010 – 2015 member of Neuronus Students Society, Institute of Zoology, Department of Biology and Earth Sciences, Jagiellonian University, president of the society in the academic year 2013/2014