



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 4363

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at Dipartimento di Scienze Farmacologiche e Biomolecolari, Scientist- in - charge Prof. Luigi Sironi

[Joanna Rzemieniec]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Rzemieniec
Name	Joanna
Date of birth	09 August 1984

PRESENT OCCUPATION

Appointment	Structure
Assistant professor	Maj Institute of Pharmacology of Polish Academy of Sciences

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Diploma in Biotechnology (Master of Sciences)	Biotechnology	University of Agriculture, Krakow, Poland	2009
Postgraduate studies	Instrumental Analysis in the Assessment of Food Quality	University of Agriculture, Krakow, Poland	2010
PhD	Medical Sciences (Discipline: Medical Biology)	Institute of Pharmacology of Polish Academy of Sciences, Krakow, Poland	2018
Other			



FOREIGN LANGUAGES

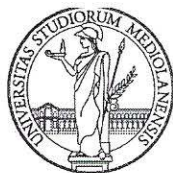
Languages	level of knowledge
English	C1
Italian	C1

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2018	A Team Award of the V Faculty of Medical Sciences of the Polish Academy of Sciences for a series of 5 publications entitled "Identification of new molecular mechanisms involving the estrogen receptors and the receptors for xenobiotics in neuroprotection and neurotoxicity, Warsaw, Poland
2018	3 rd Central European Biomedical Congress Award for the Best Oral Presentation entitled "Neuroprotective capacity of DIM against ischemia involves inhibition of AhR, but not ER α signaling"
2018	Prize from Directorate of the Institute of Pharmacology for a popular science article "Can broccoli protect us against the consequences of a stroke?" http://if-pan.krakow.pl/pl/aktywnosc-naukowa/strona-popularnonaukowa/artykuly-popularnonaukowe-20182019/czy-brokuly-moga-ochronic-nas-przed-skutkami-udaru-mozgu/
2016	Doctoral fellowship L'Oreal UNESCO For Women in Science, Poland
2016	Doctoral fellowship of the President of the Polish Academy of Sciences for outstanding scientific achievements
2017, 2013	Conference Grant for Young Investigators for participation in 7 th and 9 th International Meeting Steroid and Nervous System Turin, Italy
2016	Junior Travel Grant of the European Stroke Conference and the European Stroke Research foundation for participation and presentation of the results during EUROPEAN STROKE CONFERENCE Venice, Italy
2015	Travel Grant of Network for European CNS Transplantation & Restoration University in Lund giving opportunity to participate and present results during conference NECTAR 2015, Lund, Sweden
2014	Conference Grant for Young Investigators for participation in Glutamate/GABA and Neuro-Glia-Vascular Interplay In Norm and Pathology, Krakow, Poland

TRAINING OR RESEARCH ACTIVITY

- Extensive experience in establishment of mouse primary hippocampal, neocortical and cerebellar cell cultures
- Brain organotypic cultures
- Model of hypoxia, ischemia, excitotoxicity and Alzheimer's disease *in vitro*
- Assessment of cytotoxicity: measurement of lactate dehydrogenase release and cell viability by staining with calcein AM, NeuroFluorTM NeuO, measurement of ATPase activity



- Assessment of apoptosis by measurement of mitochondrial membrane potential, caspase-3 activity and staining with Hoechst 33342
- Assessment of oxidative stress by detection of reactive oxygen species using 2',7'-dichlorodihydrofluorescein diacetate (H₂DCFDA)
- Assessment of autophagy via measurement of autophagosome formation
- Gene silencing by the use of specific siRNAs *in vitro* and *in vivo*
- Extraction of RNA/DNA from the neuronal cells and brain tissue
- Measurement of genes expression by qPCR
- RNA and DNA extraction
- Measurement of protein levels by western blot and ELISA
- Isolation of brain tissue from the embryonic and postnatal mouse
- Detection of the receptors in neuronal cells by immunofluorescence staining
- Assessment of epigenetic modifications via measurement of histone deacetylation/acetylation, histone expression
- Behavioral test: Porsolt test, Tail suspension test, PPI
- Microsoft Office, Statistica, Image J software program, Multi Gauge V3.0, LSM Image Browser, Axiovision 3.1

PROJECT ACTIVITY

Year	Project
2018-2019	National Science Centre Grant OPUS, No 2018/31/B/NZ7/01815 Project title: The searching for effective strategies to protect neuronal cells against hypoxia and ischemia: Identification of mechanisms of neuroprotective action of new ligands of AhR and PPARγ receptors in experimental models of stroke
2015-2019	National Science Centre Grant OPUS No 2015/19/B/NZ7/02449 Project title: Neurodevelopmental patomechanisms of triclocarban- and dichlorodiphenyldichloroethylene-induced effects: the role of apoptosis and autophagy as well as the receptor signaling pathways for estrogens, aryl hydrocarbons, and androstane
2018-2019	National Science Centre Grant MAESTRO No 2012/06/A/NZ3/00022 Project title: Epigenetic mechanisms regulating drug craving and relapse to cocaine addiction
2015-2018	National Science Centre Grant Preludium No 2014/13/N/NZ4/04845 Project title: Neurotoxic effects of benzophenone-3: the role of estrogen receptors and retinoid X receptor alpha
2017	National Science Centre Grant OPUS Grant No 2012/07/B/NZ7/01149 Project title: Searching for molecular targets to reveal neuroprotective potential of tetrahydroisoquinoline amines in various experimental models of Parkinson's disease.
2016	National Science Centre Grant OPUS No 2013/09/B/NZ7/04104 Project title: Legal highs – CNS effect and neurotoxicity.
2011-2014	National Science Centre Grant Preludium No 2011/01/N/NZ3/04786; Principal Investigator , Project title: Impact of selective modulators of estrogen and aryl hydrocarbon receptors on hypoxia/ischemia-induced neuronal cell damage
2011-2014	National Science Centre Grant Preludium No 2011/01/N/NZ4/04950 Project title: Impact of endocrine disrupting chemicals - 4, para nonylphenol - on toxic effects mediated by xenobiotic receptors PXR and CAR during neurodevelopment in vitro



	and in vivo.
2007-2013	Grant DeMeTer Operating Program of Innovative Economy grant No. POIG.01.01.02-12-004/09: Depression – mechanisms – therapy. Project title: The roles of the receptors for estrogens, aryl hydrocarbons and retinoic acid in neurodevelopmental pathomechanisms of depression.
2011-2012	Ministry of Science and Higher Education Grant No N N401 572138 Project title: Neuroprotective potential of phytoestrogens in neurodevelopmental models of hypoxia and excitotoxicity

CONGRESSES AND SEMINARS

Date	Title	Place
05-08.02 2019	Neurobiology and therapy of affective disorders (<i>In polish</i> Neurobiologia i terapia zaburzeń afektywnych)	Training conference “IF PAS Winter School” of the Institute of Pharmacology of the Polish Academy of Sciences, Krakow, Poland
05-09.06 2019	Rzemieniec J, Wnuk A, Lason W, Kajta M. Selective modulators of nuclear receptors as promising agents to protect the brain against hypoxic/ischemic injury	20 th International Congress of the Polish Pharmacological Society, Lublin, Poland
06-09.02 2018	Pharmacology of cognitive disorders (<i>In polish</i> Farmakoterapia zaburzeń poznawczych)	Training conference “IF PAS Winter School” of the Institute of Pharmacology of the Polish Academy of Sciences Krakow, Poland
25-26.10 2018	Rzemieniec J, Wnuk A, Lason W, Kajta M. 3,3'-diindolylmethane protects hippocampal cells against oxygen and glucose deprivation via inhibition of apoptosis and autophagy	14 th International Symposium on Molecular Basis of Pathology and Therapy in Neurological Disorders, Warsaw, Poland
15-18.09 2018	Rzemieniec J, Wnuk A, Lason W, Kajta M. Neuroprotective capacity of DIM against ischemia involves inhibition of AhR, but not ERα signaling	3 rd Central European Biomedical Congress Krakow, Poland
10-13.01 2017	From nature to structure (<i>In polish</i> Od natury do struktury)	Training conference “IF PAS Winter School” of the Institute of Pharmacology of the Polish Academy of Sciences, Krakow, Poland
01-04.10 2017	Rzemieniec J, Wnuk A, Litwa E, Lason W, Kajta M. Selective modulator of aryl hydrocarbon receptor protects neurons against cerebral ischemia: a role of apoptosis- and autophagy- mediated cell death	National Congress of the ITALIAN NEUROSCIENCE SOCIETY, Lacco Ameno, Italy
11-15.02 2017	Rzemieniec J, Wnuk A, Lason W, Kajta M. Bazedoxifene and raloxifene protect neurons against hypoxia in ERα- and PPAR-γ-dependent pathways	9 th International Meeting: Steroids and Nervous System, Turin, Italy



12-15.01 2016	Bioengineering methods in neuroscience and medicine (<i>In polish</i> Metody bioinżynierii w neurobiologii i medycynie)	Training conference "IF PAS Winter School" of the Institute of Pharmacology of the Polish Academy of Sciences, Krakow, Poland
17-20.09 2016	Rzemieniec J, Wnuk A, Lasoń W, Kajta M. Targeting estrogen and aryl hydrocarbon receptors rescues neurons from hypoxia	29 th ECNP Congress, Vienna, Austria
15-18.06. 2016	Rzemieniec J, Wnuk A, Kajta M Ahr-targeting rescues neurons from hypoxia	2 nd Central European Biomedical Congress" From emerging biochemical strategies to personalized medicine Krakow, Poland
13-15.04 2016	Rzemieniec J, Wnuk A, Litwa E, Kajta M. Selective modulators of nuclear receptors protects neurons against stroke-like injury – a role of caspases and p38/MAP stress-activated protein kinases.	25 th European Stroke Conference ESC 2016, Venice, Italy
22-24.04 2016	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. Post-treatment of hippocampal cells with raloxifene and 3,3-diindolylmethane protects neurons against hypoxia-induced damage	Neuronus 2016 IBRO & IRUN Neuroscience Forum, Krakow, Poland
09-11.12. 2015	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. 3,3'-diindolylmethane protects neurons against hypoxia by targeting AhR-regulated CYP1A1.	NECTAR 25 th Annual Meeting, Lund, Sweden
17-19.07 2015	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. Neuroprotective effects of phytoestrogens and selective modulators of nuclear receptors	19 th International Congress of the Polish Pharmacological Society, Krakow, Poland
22-23.10 2015	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. Neuroprotective action of 3,3'-diindolylmethane on hippocampal cells exposed to ischemia involves inhibition of caspases and p38 stress-activated protein kinase.	Neurochemical Conference, Krakow, Poland
22-23.05 2015	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. Neuroprotective effects of raloxifene and 3,3'-diindolylmethane against hypoxia: studies in vitro on primary cell and organotypic cultures.	International Student Conference of Cell Biology, Krakow, Poland
15.05 2015	Stem Cells for stroke and beyond	International Symposium, Warsaw, Poland
31-5.09 2015	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Zelek-Molik A, Nalepa I, Grochowalski A, Wójtowicz A.K, Kajta M. Isomer-specific effects of dichlorodiphenyltrichloromethane (DDT)	34 th International Symposium on Halogenated Persistent Organic Pollutants, Madrid, Spain



	on classical and membrane estrogen receptor signaling in mice exhibiting depressive-like behavior	
17-19.04 2015	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. Anti-apoptotic effect of diindolylmethane in neurons undergoing hypoxia is tissue-dependent	Neuronus 2015, Krakow, Poland
14-17.01. 2014	Depression and anti-depressive drugs (<i>In polish</i> Depresja i leki przeciwdepresyjne)	Training conference "IF PAS Winter School" of the Institute of Pharmacology of the Polish Academy of Sciences, Krakow, Poland
21-24.05 2014	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. Neuroprotective capacity of raloxifene and daidzein against glutamate-induced apoptosis in mouse hippocampal cells	Glutamate/GABA and Neuro-Glia-Vascular Interplay in Norm and Pathology, Krakow, Poland
05-09.07 2014	Rzemieniec J, Litwa E, Wnuk A, Lasoń W, Kajta M. 3,3'-Diindolylmethane protects neurons against hypoxia in AhR-and ARNT-, but not ERβ-dependent pathways.	9 th FENS, Milan, Italy
16-20.02 2013	Rzemieniec J, Wnuk A, Litwa E, Lasoń W, Golas A, Kajta M. Raloxifene protects against hypoxia in ERβ and G-protein-coupled receptor 30 – independent pathways.	7 th International Meeting Steroids and Nervous System, Turin, Italy
22-23.11. 2012	Rzemieniec J, Litwa E, Lasoń W, Kajta M Impact of raloxifene and 3,3'-diindolylmethane on neuronal cells exposed to hypoxia	11 th International Symposium on Molecular Basis of Pathology and Therapy in Neurological Disorders, Warsaw, Poland
20-21.10 2011	Kajta M, Rzemieniec J, Litwa E, Lason W. An involvement of G- protein coupled receptor 30 in neuroprotective effects of daidzein	Neurochemical Conference 2011, Warsaw, Poland
19-23.02 2011	Kajta M, Lason W, Litwa E, RZEMIENIEC J. Dichlorodiphenyltrichloroethane (DDT)-induced apoptosis of embryonic neuronal cells: an involvement of G-Protein-coupled Receptor 30 and Glycogen Synthase Kinase-3β intracellular signaling. Nervous System.	6 th International Meeting Steroids and Nervous System, Turin, Italy
15-18.02 2011	Advanced brain research methods (<i>In polish</i> Zaawansowane metody badania mózgu)	Training conference "IF PAS Winter School" of the Institute of Pharmacology of the Polish Academy of Sciences, Krakow, Poland

PUBLICATIONS



Articles in reviews

Kajta M, RZEMIENIEC J, Wnuk et al. *Triclocarban impairs autophagy in neuronal cells and disrupts estrogen receptor signaling via hypermethylation of specific genes*. Science of the Total Environment Accepted for publication

Rzemieniec J et al. *The neuroprotective action of 3,3'-diindolylmethane against ischemia involves an inhibition of apoptosis and autophagy that depends on HDAC and AhR/CYP1A1 but not ER α /CYP19A1 signaling*. Apoptosis, Jun;24(5-6):435-452. Springer, 2019

Rzemieniec J et al. *Bazedoxifene and raloxifene protect neocortical neurons undergoing hypoxia via targeting ER α and PPAR- γ* . Mol Cell Endocrinol. Feb 5; 461:64-78. Elsevier, 2018

Rzemieniec J et al. *Selective aryl hydrocarbon receptor modulator 3,3'-diindolylmethane impairs AhR and ARNT signaling and protects mouse neuronal cells against hypoxia*. Mol Neurobiol. Oct;53(8):5591-606. Springer, 2016

Rzemieniec J et al. *Neuroprotective action of raloxifene against hypoxia-induced damage in mouse hippocampal cells depends on ER α but not ER β or GPR30 signalling*. J Steroid Biochem Mol Biol. Feb; 146:26-37, Elsevier, 2015

Wnuk A, RZEMIENIEC J et al. *Prenatal Exposure to Benzophenone-3 Impairs Autophagy, Disrupts RXRs/PPAR γ Signaling, and Alters Epigenetic and Post-Translational Statuses in Brain Neurons*. Mol Neurobiol. Jul;56(7):4820-4837. Springer, 2019

Kajta M, Wnuk A, RZEMIENIEC J et al. *Triclocarban disrupts the epigenetic status of neuronal cells and induces AHR/CAR-mediated apoptosis*. Mol Neurobiol. May;56(5):3113-3131, Springer, 2019

Noworyta-Sokołowska K, Kamińska K, RZEMIENIEC J et al. *Effects of exposure to 5-MeO-DIPT during adolescence on brain neurotransmission and neurotoxicity in adult rats*. Forensic Toxicol. 37(1):45-58. Springer, 2019

Szychowski KA, Wnuk A, RZEMIENIEC J et al. *Triclosan-Evoked Neurotoxicity Involves NMDAR Subunits with the Specific Role of GluN2A in Caspase-3-Dependent Apoptosis*. Mol Neurobiol. Springer, Jan;56(1):1-12, 2019

Kamińska K, Noworyta-Sokołowska K, Górka A, RZEMIENIEC J, et al. *The Effects of Exposure to Mephedrone During Adolescence on Brain Neurotransmission and Neurotoxicity in Adult Rats*. Neurotox Res. Oct;34(3):525-537 Springer, 2018

Wnuk A, RZEMIENIEC J et al. *Prenatal exposure to benzophenone-3 (BP-3) induces apoptosis, disrupts estrogen receptor expression and alters the epigenetic status of mouse neurons*. J Steroid Biochem Mol Biol. Elsevier, Sep;182:106-118, 2018

Wnuk A, RZEMIENIEC J et al. *Benzophenone-3 Impairs Autophagy, Alters Epigenetic Status, and Disrupts Retinoid X Receptor Signaling in Apoptotic Neuronal Cells*. Mol Neurobiol. Springer, Jun;55(6):5059-5074. 2018

Wnuk A, RZEMIENIEC J et al. *Apoptosis Induced by the UV Filter Benzophenone-3 in Mouse Neuronal Cells Is Mediated via Attenuation of ER α /PPAR γ and Stimulation of ER β /GPR30 Signaling*. Mol Neurobiol. Springer, Mar;55(3):2362-2383. 2018

Kajta M, Wnuk A, RZEMIENIEC J et al. *Depressive-like effect of prenatal exposure to DDT involves global DNA hypomethylation and impairment of GPER1/ESR1 protein levels but not ESR2 and AHR/ARNT signaling*. J Steroid Biochem Mol Biol. Elsevier, 2017 Jul;171:94-109. 2017



Wnuk A, RZEMIENIEC J et al. *The Crucial Involvement of Retinoid X Receptors in DDE Neurotoxicity*. Neurotox Res. Springer, Jan;29(1):155-72. 2016

Litwa E, RZEMIENIEC J et al. *RXR α , PXR and CAR xenobiotic receptors mediate the apoptotic and neurotoxic actions of nonylphenol in mouse hippocampal cells*. J Steroid Biochem Mol Biol. Elsevier, Feb;156:43-52.2016

Litwa E, RZEMIENIEC J et al. *Apoptotic and neurotoxic actions of 4-para-nonylphenol are accompanied by activation of retinoid X receptor and impairment of classical estrogen receptor signaling*. J Steroid Biochem Mol Biol. Elsevier, Feb;156:43-52. 2014

Kajta M, Litwa E, RZEMIENIEC J et al. *Isomer-nonspecific action of dichlorodiphenyltrichloroethane on aryl hydrocarbon receptor and G-protein-coupled receptor 30 intracellular signaling in apoptotic neuronal cells*. Mol Cell Endocrinol. Elsevier, Oct;144 Pt B:334-47. 2014

Kajta M, RZEMIENIEC J et al. *The key involvement of estrogen receptor β and G-protein-coupled receptor 30 in the neuroprotective action of daidzein*. Neuroscience. Elsevier, 15;238:345-60. 2013

Małgorzata Kajta, RZEMIENIEC J, Witold Rużyłło *In search of new therapeutic strategies for the treatment of hypoxia-ischemia-induced brain damages* NAUKA 3/2016 Review in Polish

Congress proceedings

Rzemieniec J., Wnuk A., Lasoń W., Kajta M. 3,3'-diindolylmethane protects hippocampal cell against oxygen and glucose deprivation via inhibition of apoptosis and autophagy Folia Neuropathologica, Volume 56/3 page 255, 2018

Rzemieniec J., Wnuk A., Litwa E., Lasoń W., Kajta M. Neuroprotection of raloxifene and bazedoxifene against hypoxia depends on developmental stage but not on caspase-3 related apoptosis. Folia Neuropathol. Volume 54/3 page 323, 2016

Kajta M., Lason W., Litwa E., RZEMIENIEC J et al. Behavioral effects of prenatal exposure to 4-para nonylphenol: studies on female and male mice subjected to the Novel Object Recognition Test INTERNATIONAL JOURNAL OF PSYCHIATRY IN CLINICAL PRACTICE Volume: 16 Supplement: 1 Pages: 37-37, 2012

Wnuk A., RZEMIENIEC J., Kajta M. The apoptotic effects of chemical UV-filter benzophenone-3 Folia Neuropathol. 2016, Volume 54/3 page 328.

Rzemieniec J., Litwa, E., Wnuk, A., Lason W, Kajta M Selective modulators of nuclear receptors protects neurons against stroke-like injury: a rote of caspases and p38/MAP stress-activated protein kinases CEREBROVASCULAR DISEASES Volume: 41 Supplement: 1 Pages: 210-210, 2016

Wnuk, A., RZEMIENIEC, J., Kajta, M. Apoptotic and neurotoxic actions of chemical UV filter benzophenone-3: a role of the classical and membrane estrogen receptors EUROPEAN NEUROPSYCHOPHARMACOLOGY Volume: 26 Supplement: 2 Pages: S370-S370, 2016

Rzemieniec J., Wnuk A., Lason W., Kajta M Targeting estrogen and aryl hydrocarbon receptors rescues neurons from hypoxia EUROPEAN NEUROPSYCHOPHARMACOLOGY Volume: 26 Supplement: 2 Pages: S370-S371, 2016

Rzemieniec J., Litwa E., Wnuk A., Lason W., Kajta M Neuroprotective effects of phytoestrogens and selective modulators of nuclear receptors PHARMACOLOGICAL REPORTS Volume: 67 Supplement: 1 Pages: 10-11, 2015

Litwa E., RZEMIENIEC J., Wnuk A., Lason W Neurodevelopmental effects of nonylphenol



PHARMACOLOGICAL REPORTS Volume: 67 Supplement: 1 Pages: 9-10, 2015

Kajta M., RZEMIENIEC J., Litwa E., et al. Neuroprotective action of daidzein: a crucial role of G-protein coupled receptor 30 PHARMACOLOGICAL REPORTS Volume: 64 Issue: 2 Pages: 465-466, MAR-APR 2012

Rzemieniec J., Litwa E., Lason W., et al. Neuroprotective potential of selective modulators of estrogen and aryl hydrocarbon receptors: the effects of raloxifene, daidzein, and 3,3'-diindolylmethane in response to hypoxia PHARMACOLOGICAL REPORTS Volume: 64 Issue: 2 Pages: 468-469 MAR-APR 2012

Kajta M., RZEMIENIEC J., Litwa E. et al. An involvement of G-protein-coupled receptor 30 in neuroprotective effects of daidzein PHARMACOLOGICAL REPORTS Volume: 63 Issue: 5 Pages: 1290-1290, SEP-OCT 2011

OTHER INFORMATION

06.2018, 2019 Lectures and laboratory practicals from Basics in Neurobiology for the students of Bioengineering of Animals of the University of Agriculture in Krakow

04.2017 Organization of International workshop for PhD students and Young Investigators from Institute of Pharmacology PAS in Krakow and International Institute of Molecular and Cell Biology in Warsaw, Bialka Tatrzańska, Poland

05.2017, 2018, 2019 Festival of Science and Art, Workshops and lectures for children and teenagers

2014-2018 Supervision and teaching of master's and PhD students

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: Krakow, 03.10.2019

SIGNATURE

Joanna Rzemieniec