

BIOGRAPHICAL SKETCH

<p>NAME</p> <p style="text-align: center;">Józef Dulak</p>	<p>POSITION TITLE</p> <p>Professor, PhD, DS, Dr h.c. Head of Department of Medical Biotechnology</p> <p><i>Member of the Polish Academy of Arts and Sciences</i></p> <p>Address:</p> <p>Department of Medical Biotechnology Faculty of Biochemistry, Biophysics and Biotechnology Jagiellonian University Gronostajowa 7 30-387 Kraków Poland phone: +48-12-664-63-75 fax: +48-12- 664-69-18 email: jozef.dulak@uj.edu.pl http://biotka.mol.uj.edu.pl/zbm</p> <p>Born: 15.06.1962; Nowy Sacz, Poland</p>
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EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
1. Faculty of Biology and Earth Sciences, Jagiellonian University, Kraków, Poland	MSc	1986	Biology
2. Faculty of Biology and Earth Sciences, Jagiellonian University, Kraków, Poland	PhD	1990	Zoology/Immunology
3. Department of Immunology, Free University, Amsterdam, The Netherlands	Post-doc	1990-1991	Immunology/Cell Biology
4. Department of Clinical Biochemistry, University of Muenster, Germany	Post-doc	1994	Biochemistry
5. Falk Cardiovascular Research Center, Stanford University, USA	Post-doc	1996-97	Vascular Biology
6. Institute of Molecular Biology and Biotechnology, Jagiellonian University, Kraków, Poland	DSc (habilitation)	2001	Biochemistry
7 Faculty of Biochemistry, Biophysics and Biotechnology Jagiellonian University, Krakow, Poland	Professor	2007	Biochemistry

1) Positions and Honors.

1. Positions and employment:

Since OCTOBER 2007 - Professor and Head, Department of Medical Biotechnology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Kraków, Poland

JUNE 2006 – AUGUST 2008 - Vice Dean for International Affairs , Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Kraków, Poland

since JUNE 2005- Head of Department, Department of Medical Biotechnology, Faculty of Biotechnology, Jagiellonian University, Kraków, Poland

SEPT2001-JUNE2005 Associate Professor, Department of Cell Biochemistry, Faculty of Biotechnology, Jagiellonian University, Kraków, Poland

AUG1999- SEPT2001 Visiting Scientist at the Department of Cardiology, Innsbruck University, Innsbruck, Austria

OCT1993-AUG2001 Assistant Professor at the Department of Clinical Biochemistry, Medical Faculty, Jagiellonian University, Kraków, Poland

OCT1990-SEPT1993 Research assistant (post-doctoral) at the Laboratory of Evolutionary Immunology, Faculty of Biology, Jagiellonian University, Kraków, Poland

OCT1987-SEPT1990 PhD Student at the Laboratory of Evolutionary Immunology, Faculty of Biology, Jagiellonian University, Kraków, Poland

MARCH 1985-SEPT 1987 Technical assistant at the Department of Comparative Anatomy, Faculty of Biology, Jagiellonian University, Kraków, Poland

International scientific position

- 2017-2020 – co-coordinator of the Polish-French International Associated Laboratory (LIA) – supported CNRS (France) and Jagiellonian University – together with prof. Eva Jakab-Toth
- 2013-2016, co-coordinator (together with prof. Claudine Kieda) of the Polish-French International Associated Laboratory (LIA) – supported CNRS (France) and Jagiellonian University

Other national scientific activities

- Scientific director of the Kardio-Med Silesia (Silesian Park of Medical Technologies) – since March 2016

Honors

1. Doctor honoris causa – University of Orleans, France, 15 March 2012
2. Corresponding member of the Polish Academy of Arts and Sciences – elected in 2011
3. FrdERIC Leloir Award (Argentina) – 2014

2. Other fellowships/honors abroad

Recent

1. Visiting professor at University of Orleans, France – autumn 2013
2. Visiting professor of the Japanese Society for the Promotion of Science -Japan, August-September 2010
3. Visiting professor at University of Orleans, France – in academic year 2008/2009
4. Visiting Scientist at the Department of Cardiology, Innsbruck University, Innsbruck, Austria – 1999-2001 (25 months)
5. Fellowship at Falk Cardiovascular Research Center, Stanford University, USA – 1996/97 (4 months)
6. Fellowship at the Department of Clinical Biochemistry, University of Muenster, Germany – 1994 (6 months)
7. Fellowship at the Department of Cell Immunology, Free University Amsterdam, The Netherlands – 1990/91 (6 months)

3. Other professional activities:

- President of the European Society for Vascular Biology (EVBO), 2013-2015; reelected 2015-2017
- Fellow of the European Society of Cardiology (FESC) – since 2015
- Member of the International Society for Stem Cell Research (ISSCR)– since 2014
- Member of the European Society of Gene and Cell Therapy (ESGCT – since 2016
- Professional member of the American Heart Association (AHA) – since 2015
- Member of the Polish Biochemical Society
- Member of the Polish Society for Cell Biology
- Member of the Polish Bioethical Society

Editorial board member

- Arteriosclerosis, Thrombosis and Vascular Biology – since June 2009
- PLoS One – since 2014
- Vascular Pharmacology – since January 2015
- Scientific Reports – since 2015
- IUBMB Life - since 2017
- Folia Biologica (Krakow) – since 2010
- Vascular Cell –2012-2016
- Postępy Biochemii – since 2015

Scientific committees and societies

Current

- Member of the Committee for Evaluation of Scientific Institutions (KEJN) – Ministry of Science and Higher Education, 2011-2014 and 2015-2018
- Member of the Polish Academy of Sciences Committee on Biotechnology – 2016-2019 (second term election after 2011-2015).
- Member of the Council of the Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Kraków, Poland – since April 2002

Past

- Member of the Council of the European Vascular Biology Organization (EVBO) - since 2006, renewed 2010 (president since 2013; re-elected 2015).
- Member of the Scientific Committee of the Innovative Medicines Initiatives, Brussels – three terms October 2008-2009; 2009-2011, 2011 -2013

- Member of the Polish Academy of Sciences Committee on Biochemistry and Biophysics – 2007-2011; 2011-2015.
- Coordinator of the Polish Biotechnological Platform - 2008-2010
- Member of the Council of Polish Biochemical Society – 2008-2011
- Head of Krakow branch of Polish Biochemical Society - 2005 - 2008
- Founding member and Member of the council of Polish Bioethical Society – 2006-2010
- Member of the scientific council of Nencki Institute of Experimental Biology PAN, Warsaw, 2011-2014
- Member of the scientific council of Institute of Pharmacology, PAN, Krakow, 2011-2014

Others

- Editor of the book – Angiogenesis and vascularization. Cellular and Molecular mechanisms in health and diseases. Springer Wien, spring 2014 (together with Alicja Jozkowicz & Agnieszka Łoboda)
- Editor of the special issue (Forum issue) of Antioxidants and Redox Signaling –April 2014 (together with Alicja Józkwicz)
- Editor of the special issue of GENE (August 2013) – “50 years anniversary of gene therapy” ((together with Alicja Józkwicz)
- Editor of the special issue of Vascular Pharmacology (2012) - “Current prospects in vascular biology and medicine” – May/June 2012 (together with A. Józkwicz)
- Editor of the special issue of “Vascular Pharmacology” – 2016 - *Vascular biology: new mechanisms and pathways (together with Anna Randi and Yvonne M. Alexander*
- Editor of the special issue of Thrombosis & Hemostasis (2012) - ((together with Tomasz Guzik)
- Editor of the special issues of the journals: Antioxidant and Redox Signaling - 2007 (issue on Heme Oxygenase), Acta Biochimica Polonica -2004, 2005 - sections on regulation of gene expression oxidative stress (2004) and molecular biology & biotechnology (2005).
- Reviewer and panel member of the European Research Council (2013-..)
- Reviewer and panel member for Horizon 2020 (different calls) – since 2015
- Reviewer for the journals: *Arteriosclerosis Thrombosis and Vascular Biology, Cardiovascular Research, FASEB J, Nature Molecules, Nature Communications, PLoS One, Vascular Pharmacology, Atherosclerosis, Free Radicals Biology and Medicine, Gene Therapy, Leukemia, Cancer Research, Clinical Cancer Research, Antioxidants and Redox Signaling, British Journal of Pharmacology, Angiogenesis, Current Gene Therapy, Journal of Gene Medicine, Journal of Molecular Medicine, Oncogene, Molecular and Cellular Biochemistry, Experimental Gerontology, Cellular and Molecular Biology, Pharmacological Reports, Journal of Physiology and Pharmacology, Acta Biochimica Polonica, European Journal of Vascular Surgery, Neuroscience Letters, Carcinogenesis, International Journal of Cancer, Molecular Medicine, Journal of Cellular Physiology, International Journal of Cancer*
- Reviewer of the grant proposals for: European Research Council (panel member), European Commission (6th & 7th Framework Programme), Polish Ministry for Science and Higher Education, Foundation for Polish Science, National Science Center, National Center for Research and Development, Austrian Society of Cardiology, Wellcome Trust, Swiss Research Foundation, Science Foundation Ireland (2012, 2016), Norwegian Research Council (2014), Research Council of Lithuania, (2016); *The Research Programme of Latvian Biomedical Research and Study Centre (2015)*
- Organizer (chair or ch-chair) of international scientific conferences:**

1. 2019 – 7th Eurobiotech 2019 Kraków, 23-25 September 2019 (co-chair)

2. 2018 – 20th International Vascular Biology Meeting – 3-7 June, Helsinki (co-chair; 1000 participants)
3. 2017 – 2nd Joint and 29th European Society for Microcirculation and 9th European Vascular Biology Organisation Meeting, Geneva, 28 May-1st June 2017 – core scientific committee (co-chair as the EVBO president)
4. 2015 – The Joint 28th European Society for Microcirculation and 8th European Vascular Biology Organisation Meeting, Pisa, Italy, 30-5 June 2015 (co-chair)
5. 2015 - Perspectives in medical biotechnology. Polish Academy of Arts and Sciences, Krakow, 22-23 May 2015
6. 2014 – microRNAs: mediators of differentiation and biomarkers of diseases. 2nd Workshop, Krakow, 4-6 th December 2014
7. 2013 - microRNAs: mediators of differentiation and biomarkers of diseases. Paris, 8-10 December
8. 2012 – 50 years of gene therapy. Krakow, 28-29 September 2012
9. 2011 – 6th European Vascular Biology Organisation Meeting (Krakow, 21-24 September 2011)
10. 2008 – European Vascular Genomics Network – summer school; Krakow, 16-18 September 2008
11. 2007 – Second Polish-French Scientific Meeting on Molecular Mechanisms of Tumor-Host Interactions
12. 2007 – Heme Oxygenases 2007 – 5th International Congress, Krakow, 5-9 September 2007
13. 2006 – First Polish-American Symposium on Drug Design and Discovery in Academia. November 2006, Krakow
14. 2005 - Polish-French Scientific Meeting on Molecular Mechanisms of Tumor-Host Interactions, September 2005, Krakow
15. 2005 – XXXII Winter School of the Faculty of Biotechnology, Jagiellonian University, March, Zakopane 2005

Co-organizer of international scientific conferences (session chair/organizer)

1. 2019 – vice chair of the 7th Eurobiotech conference, Kraków, 23-25 September 2019
2. 2019 - member of the International scientific committee of 44th FEBS Congress, 6-11 July 2019, Kraków
3. 2018 -10th Meeting on Heme Oxygenases, Seoul, Korea, 31 Oct-3 Nov;
4. 2018 - Frontiers in Cardiovasc Biology 2018; Vienna, Austria, 19-22 April
5. 2017 – 6th Eurobiotech 2017, Central European Congress on Biotechnology, 13-16 September, Krakow, Poland –organizing committee, scientific committee
6. 2016 – 9th Congress on Heme Oxygenases, 14-17th September, Prague, Czech Republic.
7. 2016 – Frontiers in Cardiovascular Biology, 2016,, 7-10th July, Florence, Italy
8. 2016 – 17th European Congress on Biotechnology, 3-6th July 2016; Krakow, Poland - member of the local organizing and scientific committee
9. 2014 – 18th Federation of European Physiological Society Meeting, 27-29 August, Budapest
10. 2007 - Parnas Biochemical Conference, Kraków, May 2007
11. 2008 - Eurobiotech 2008, (Central European Congress on Biotechnology, Krakow);
12. 2010 – Eurobiotech 2010;
13. 2011- 2nd Polish Congress of Biochemistry and Cell Biology – 5-9 September 2011;
14. 4th Polish Congress of Biochemistry – Eurobiotech 2011

Member of the Scientific Organizing Committees/Scientific Advisory Boards of international conferences

1. 2016 – 9th Congress on Heme Oxygenases, 14-17th September, Prague, Czech Republic.
2. 2016 – Frontiers in Cardiovascular Biology, 2016,, 7-10th July, Florence, Italy
3. 2016 – 17th European Congress on Biotechnology, 3-6th July 2016; Krakow, Poland
4. 2014 – 8th International Conference on Heme Oxygenases, Bioiron and Oxidative Stress, Sydney, Australia, 8-11 October 2014
5. 2014 – 18th International Vascular Biology Meeting, Kyoto, Japan, 13-17 April 2014
6. 2013 - Joint Meeting 27th European Microcirculation Society and 7th European Vascular Biology Organisation; Birmingham, UK, 21-26 July 2013
7. 2012 – International Congress for Vascular Biology and Medicine – Wiesbaden, Germany, 2-5th June, 2012
8. 2012 – 7th Heme Oxygenase Congress, Edinburgh, UK, 28 May-1st June 2012
9. 2009- 6th European Vascular Biology Meeting, Marseille, September

10.2009 – 6th Meeting on Heme Oxygenase in Biology and Medicine, Miami, 30.09-04.10. 2010

11.2007 – European Vascular Biology Meeting, Bristol; September,

4. Awards:

1. Luis Federico Leloir Award – Argentinian Ministry of Science and Technological Innovation, 17 Nov 2014
2. Tadeusz Browicz Award of the Polish Academy of Arts and Sciences – 2010
3. Award of the Rector of Jagiellonian University for the best scientists at the University in years 2004-2008 (based on impact factor of publications) – 2009, ,
4. Award of the Rector of Warsaw Medical University – 2009 (group award for publications)
5. Award of the Rector of Jagiellonian University (head of the research group), 2008, 2011, 2012, 2014, 2017
6. Award of the Minister of Science and Higher Education (head of the research group) – 2006
7. Award of the Rector of Jagiellonian University, Kraków, Poland – 1st level – 2004
8. Award fellowship (one year) of the rector of the Jagiellonian University – 2004/2005
9. Award of the Austrian Society for Atherosclerosis Research (best oral presentation)– May 2000
10. Award (individual) of the Rector of Jagiellonian University – 1993
11. Award (group) of the Rector of Jagiellonian University – 1989
12. Scholarship of the Ministry of Education – 1984/85

5. Selected peer-reviewed publications

Citations - more than 7100 (without autocitation) - (based on Scopus)

H index = 52

The most important recent publications are highlighted.

1. Szade K, Zukowska M, Szade A, Nowak W, Skulimowska I, Ciesla M, Bukowska-Strakova K, Gulati GS, Kachamakova-Trojanowska N, Kusienicka A, Einwallner E, Kijowski J, Czauderna S, Esterbauer H, Benes V, L Weissman I, **Dulak J**, Jozkowicz A. Heme oxygenase-1 deficiency triggers exhaustion of hematopoietic stem cells. *EMBO Rep.* 2019 Dec 29:e47895. doi: 10.15252/embr.201947895. [Epub ahead of print]
2. Kachamakova-Trojanowska N, Stepniowski J, **Dulak J**. Human iPSCs-derived endothelial cells with mutation in HNF1A as a model of maturity-onset diabetes of the young. *Cells.* 2019 Nov 14;8(11). pii: E1440. doi: 10.3390/cells8111440.
3. Szade A, Szade K, Nowak WN, Bukowska-Strakova K, Muchova L, Gońka M, Żukowska M, Cieśla M, Kachamakova-Trojanowska N, Rams-Baron M, Ratuszna A, **Dulak J**, Józkowicz A. Cobalt protoporphyrin IX increases endogenous G-CSF and mobilizes HSC and granulocytes to the blood. *EMBO Mol Med.* 2019 Dec;11(12):e09571. doi: 10.15252/emmm.201809571. Epub 2019 Nov 11
4. Klóska D, Kopacz A, Piechota-Polańczyk A, Neumayer C, Huk I, **Dulak J**, Józkowicz A, Grochot-Przęczek A. Biliverdin reductase deficiency triggers an endothelial-to-mesenchymal transition in human endothelial cells. *Arch Biochem Biophys.* 2019 Dec 15;678:108182. doi: 10.1016/j.abb.2019.108182. Epub 2019 Nov 5.
5. Krist B, Podkalicka P, Mucha O, Mendel M, Sępioł A, Ruricka OM, Józefczuk E, Bukowska-Strakova K, Grochot-Przęczek A, Tomczyk M, Klóska D, Giacca M, Maga P, Niżankowski R, Józkowicz A, Łoboda A, Dulak J., Florczyk U. miR-378 influences vascularization in skeletal muscles. *Cardiovasc Res.* 2019; doi: 10.1093/cvr/cvz236
6. Kopacz A, Klóska D, Proniewski B, Cysewski D, Personnic N, Piechota-Polańczyk A, Kaczara P, Zakrzewska A, Forman HJ, **Dulak J**, Józkowicz A, Grochot-Przęczek A Keap1 controls protein S-nitrosation and apoptosis -senesncece switch in endothelial cells. *Redox Biol.* 2019 Aug 22;28:101304. doi: 10.1016/j.redox.2019.101304. [Epub ahead of print]
7. Bronisz-Budzyńska I, Chwalenia K, Mucha O, Podkalicka P, Karolina-Bukowska-Strakova, Józkowicz A, Łoboda A, Kozakowska M, **Dulak J**. miR-146a deficiency does not aggravate muscular dysrophy in mdx mice. *Skelet Muscle.* 2019 Aug 14;9(1):22. doi: 10.1186/s13395-019-0207-0.
8. Nowak WN, Taha H, Markiewicz J, Kachamakova-Trojanowska N, Stepniowski J, Klóska D, Florczyk-Soluch U, Niżankowski R, Frołow M, Walter Z, **Dulak J**, Józkowicz A. Atorvastatin and conditioned media from atorvastatin-treated human hematopoietic stem/progenitor-derived cells show proangiogenic activity *in vitro* but not *in vivo*. *Mediators Inflamm.* 2019 Jul 16;2019:1868170. doi: 10.1155/2019/1868170. eCollection 2019.
9. Gu W, Nowak WN, Xie Y, Le Bras A, Hu Y, Deng J, Issa Bhaloo S, Lu Y, Yuan H, Fidanis E, Saxena A, Kanno T, Mason AJ, **Dulak J**, Cai J, Xu Q. Single-Cell RNA-sequencing and metabolomics analyses reveal the contribution of perivascular adipose tissue

stem cells to vascular remodeling. *Arterioscler Thromb Vasc Biol.* 2019 Jul 25;ATVBAHA119312732. doi: 10.1161/ATVBAHA.119.312732. [Epub ahead of print]

10. Mucha O, Podkalicka P, Mikulski M, Barwacz S, Andrysiak K, Biela A, Mieczkowski M, Kachamakova-Trojanowska N, Ryszawy D, Białas A, Szelażek B, Grudnik P, Majewska E, Michalik K, Jakubiec K, Bień M, Witkowska N, Gluza K, Ekonomiuk D, Sitarz K, Gałęzowski M, Brzózka K, Dubin G, Józkwicz A, **Dulak J**, Łoboda A. Development and characterisation of a new inhibitor of heme oxygenase activity in cancer treatment. *Arch Biochem Biophys.* 2019 Jul 2;671:130-142. doi: 10.1016/j.abb.2019.07.002
11. Podkalicka P, Mucha O, Dulak J, Loboda A. Targeting angiogenesis in Duchenne muscular dystrophy. *Cell Mol Life Sci.* 2019 Apr;76(8):1507-1528. doi: 10.1007/s00018-019-03006-
12. Stępniewski J, Florczyk-Soluch U, Szade K, Bukowska-Strakova K, Czapla J, Matuszczak S, Jarosz-Biej M, Langrzyk A, Tomczyk M, Rumieńczyk I, Kulecka M, Mikuła M, Ostrowski J, Jaźwa-Kusior A, Zembala M, Józkwicz A, Zembala MO, **Dulak J**. Transcriptome of human mesenchymal cells isolated from the right ventricle and epicardial fat differ strikingly both directly after isolation and long-term culture. *ESC Heart Fail.* 2019 Apr;6(2):351-361. doi: 10.1002/ehf2.12397.
13. Kloska D, Kopacz A, Cysewski D, Aepfelbacher M, **Dulak J**, Jozkwicz A, Grochot-Przeczek A. Nrf2 sequesters Keap1 preventing podosome disassembly: a quintessential duet moonlights in endothelium. *Antioxid Redox Signal.* 2019 May 10;30(14):1709-1730. doi: 10.1089/ars.2018.7505
14. Damulewicz M, Świętek M, Łoboda A, **Dulak J**, Bińska B, Przewłocki R, Pyza E. Daily regulation of phototransduction, circadian clock, DNA repair, and immune gene expression by heme oxygenase in the retina of *Drosophila*. *Genes (Basel).* 2018 Dec 21;10(1). pii: E6. doi: 10.3390/genes10010006
15. Łoboda A, Mucha O, Podkalicka P, Sobczak M, Miksza-Cybulska A, Kaczara P, Jozkwicz A, **Dulak J**. Kidney injury by cyclosporine A is aggravated in heme oxygenase-1 deficient mice and involves regulation of microRNAs. *Acta Biochim Pol.* 2018 Nov 27;65(4):613-620. doi: 10.18388/abp.2018_26
16. Šmíd V, Šuk J, Kachamakova-Trojanowska N, Jašprová J, Valášková P, Józkwicz A, **Dulak J**, Šmíd F, Vítek L, Muchová L. Heme oxygenase-1 may affect cell signalling via modulation of ganglioside composition. *Oxid Med Cell Longev.* 2018 Sep 19;2018:3845027. doi: 10.1155/2018/3845027
17. Tomczyk M, Kraszewska I, **Dulak J**, Jazwa-Kusior A. Modulation of the monocyte/macrophage system in heart failure by targeting heme oxygenase-1. *Vascul Pharmacol.* 2019 Jan;112:79-90. doi: 10.1016/j.vph.2018.08.011
18. Kloska D, Kopacz A, Piechota-Polanczyk A, Nowak WN, **Dulak J**, Jozkwicz A, Grochot-Przeczek A. Nrf2 in angion- focus on the cardiovascular system. *Vascul Pharmacol.* 2019 Jan;112:42-53. doi: 10.1016/j.vph.2018.08.009
19. Kachamakova-Trojanowska N, Jazwa-Kusior A, Szade K, Kasper L, Soja J, Andrychiewicz A, Jakiela B, Plutecka H, Sanak M, Jozkwicz A, Śladek K, **Dulak J**. Molecular profiling of regulatory T cells in pulmonary sarcoidosis. *J Autoimmun.* 2018 Nov;94:56-69. doi: 10.1016/j.jaut.2018.07.012. Epub 2018 Jul 23.
20. Florczyk-Soluch U, Józefczuk E, Stępniewski J, Bukowska-Strakova K, Mendel M, Viscardi M, Nowak WN, Józkwicz A, **Dulak J**. Various roles of heme oxygenase-1 in response of bone marrow macrophages to RANKL and in the early stage of osteoclastogenesis. *Sci Rep.* 2018 Jul 17;8(1):10797. doi: 10.1038/s41598-018-29122-1.
21. Kloska D, Kopacz A, Cysewski D, Aepfelbacher M, **Dulak J**, Jozkwicz A, Grochot-Przeczek A. Nrf2 Sequesters Keap1 Preventing Podosome Disassembly: A Quintessential Duet Moonlights in Endothelium. *Antioxid Redox Signal.* 2018 Oct 25. doi: 10.1089/ars.2018.7505. [Epub ahead of print]
22. Pietraszek-Gremplewicz K, Kozakowska M, Bronisz-Budzynska I, Ciesla M, Mucha O, Podkalicka P, Madej M, Glowinski U, Szade K, Stępniewski J, Jez M, Andrysiak K, Bukowska-Strakova K, Kaminska A, Kostera-Pruszczyk A, Jozkwicz A, Loboda A, **Dulak J**. Heme Oxygenase-1 influences satellite cells and progression of Duchenne muscular dystrophy in mice. *Antioxid Redox Signal.* 2018 Jul 10;29(2):128-148. doi: 10.1089/ars.2017.7435. Epub 2018 May 23
23. Mucha O, Podkalicka P, Czarnek M, Biela A, Mieczkowski M, Kachamakova-Trojanowska N, Stępniewski J, Jozkwicz A, **Dulak J**, Loboda A. Pharmacological versus genetic inhibition of heme oxygenase-1 – the comparison of metalloporphyrins, shRNA and CRISPR/Cas9 system. *Acta Biochim Pol.* 2018;65(2):277-286. doi: 10.18388/abp.2017_2542. Epub 2018 Apr 25
24. Sobuś A, Baumert B, Litwińska Z, Gołąb-Janowska M, Stępniewski J, Kotowski M, Pius-Sadowska E, Kawa MP, Gródecka-Szwajkiewicz D, Peregud-Pogorzelski J, **Dulak J**, Nowacki P, Machaliński B. Safety and feasibility of Lin- administration to ALS patients: a novel view on humoral factors and miRNA profiles. *Int J Mol Sci.* 2018 Apr 27;19(5). pii: E1312. doi: 10.3390/ijms19051312.
25. Piechota-Polanczyk A, Kopacz A, Kloska D, Zagrapan B, Neumayer C, Grochot-Przeczek A, Huk I, Brostjan C, **Dulak J**, Jozkwicz A. Simvastatin treatment upregulates HO-1 in patients with abdominal aortic aneurysm but independently of Nrf2. *Oxid Med Cell Longev.* 2018 Mar 20;2018:2028936. doi: 10.1155/2018/2028936. eCollection 2018.
26. Stępniewski J, Pacholczak T, Skrzypczyk A, Ciesla M, Szade A, Szade K, Bidanel R, Langrzyk A, Grochowski R, Vandermeeren F, Kachamakova-Trojanowska N, Jez M, Drabik G, Nakanishi M, Jozkwicz A, **Dulak J**. Heme oxygenase-1 affects generation and spontaneous cardiac differentiation of induced pluripotent stem cells. *IUBMB Life.* 2018 Feb;70(2):129-142. doi: 10.1002/iub.1711. Epub 2018 Jan 9.
27. Kozakowska M, Pietraszek-Gremplewicz K, Ciesla M, Seczynska M, Bronisz-Budzynska I, Podkalicka P, Bukowska-Strakova K, Loboda A, Jozkwicz A, **Dulak J**. Lack of heme oxygenase-1 induces inflammatory reaction and proliferation of muscle

- satellite cells after cardiotoxin-induced skeletal muscle injury* Am J Pathol. 2018 Feb;188(2):491-506. doi: 10.1016/j.ajpath.2017.10.017. Epub 2017 Nov 21
28. Nowak WN, Taha H, Kachamakova-Trojanowska N, Stepniewski J, Markiewicz JA, Kusienicka A, Szade K, Szade A, Bukowska-Strakova K, Hajduk K, Klóska D, Kopacz A, Grochot-Przeczek A, Barthenheier K, Cauvin C, **Dulak J, Jozkowicz A.** Murine bone marrow mesenchymal stromal cells respond efficiently to oxidative stress despite the low level of heme oxygenase 1 and 2. Antioxid Redox Signal. 2018 Jan 3. doi: 10.1089/ars.2017.7097. [Epub ahead of print]
29. Langrzyk A, Nowak WN, Stepniewski J, Jaźwa A, Florczyk-Soluch U, Józkowicz A, **Dulak J.** Critical view on mesenchymal stromal cells in regenerative medicine. Antioxid Redox Signal. 2017 Oct 11. doi: 10.1089/ars.2017.7159. [Epub ahead of print]
30. Tomczyk M, Kraszevska I, Szade K, Bukowska-Strakova K, Meloni M, Jozkowicz A, **Dulak J, Jazwa A** Splenic Ly6Chi monocytes contribute to adverse late post-ischemic left ventricular remodeling in heme oxygenase-1 deficient mice.. Basic Res Cardiol. 2017 Jul;112(4):39; doi: 10.1007/s00395-017-0629-y. Epub 2017 May 22
31. Loboda A, Stachurska A, Sobczak M, Podkalicka P, Mucha O, Jozkowicz A, **Dulak J** Nrf2 deficiency exacerbates ochratoxin A-induced toxicity in vitro and in vivo. Toxicology. 2017 Jul 12;389:42-52
32. Damulewicz M, Loboda A, Jozkowicz A, **Dulak J, Pyza E** Haeme oxygenase protects against UV light DNA damages in the retina in clock-dependent manner.. Sci Rep. 2017 Jul 12;7(1):5197
33. Klimkiewicz K, Weglarczyk K, Collet G, Paprocka M, Guichard A, Sarna M, Jozkowicz A, **Dulak J, Sarna T, Grillon C, Kieda C.** A 3D model of tumour angiogenic microenvironment to monitor hypoxia effects on cell interactions and cancer stem cell selection. Cancer Lett. 2017 Jun 28;396:10-20
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6. Patents awarded

Agata Szade, Krzysztof Szade, Alicja Józkowicz, **Józef Dulak** Cobalt porphyrins for the treatment of blood-related disorders. *United States Patent No. 10,010,557 B2*, July 3, 2018

7. Research fields:

1. Stem cell biology
2. Medical biotechnology: gene and cell therapy in cardiovascular diseases
3. Signaling in vascular biology
4. Role of heme oxygenase-1 in health and disease: modulation of inflammation and angiogenesis
5. Molecular mechanisms of vasculogenesis and angiogenesis: role of hypoxia
6. Pharmacological modulation of inflammation and angiogenesis

8. Ongoing or completed research projects:

I. Ongoing grants (listed only in which I am the PI)

National Science Center

1. *Molecular mechanisms of heart failure in Duchenne and becker muscular dystrophy – MAESTRO grant (awarded for the 2nd time) – 3 999 800 PLN (932 000 €) – 2019.05.06-2024.05.05*
2. **NMJ-on-a-Chip**: Humanized high-throughput co-culture system for motor neuron diseases. Polish Principal Investigator: prof. dr hab. Józef Dulak, Jagiellonian University in Cracow. The project will involve research teams from France, Germany, Israel, Italy, Netherlands

Horizon 2020 –

1. *Heart On chip based on induced pluripotent Stem cell Technology for personalized Medicine (CISTEM) - European Commission – Horizon 2020 – Marie Skłodowska-Curie Action – RISE action - 2018.01.01-2021.12.31*

National Centre for Research and Development-

1. *Implementation to surgical practice new technologies for reconstruction and regeneration of damaged tissues in the craniofacial area (POIR.04.01.02-00-0085/17 - 2018.01.01-2020.12.31. PI at Kardio-Med Silesia (4 partners)*

II. Recently finished grants (PI only)

National Science Center

1. MAESTRO grant from National Science Center - *Role of microRNAs and inflammation in injury and regeneration of skeletal muscles in Duchenne muscular dystrophy. Principal investigator, 2013-2018, 700 000 Euro (2 998 000 PLN)*
2. OPUS grant from National Science Center - *Novel mechanisms of tissue repair: effect of miR-378/miR-378* on blood vessel formation for ischemic muscles regeneration and wound healing: 2013-2017; 250 000 Euro*
3. HARMONIA grant from National Science Center - *The role of heme oxygenase-1 in cardiomyocyte differentiation from induced pluripotent stem cells (HMOX-CARD). 2015-2019; (1 778 000 PLN; 400 000 Euro)*

National Center for Research and Development

1. New inhibitors of heme oxygenase-1 pathway as potential anti-cancer drugs. 2014-2016. (consortial project; coordinator of research task - 600 000 Euro - at Jagiellonian University)
2. Epigenetic therapies in oncology. 2014-2017 - (consortial project; coordinator of research task - 600 000 Euro - at Jagiellonian University)
3. Mesenchymal stromal cells and cell-enhanced scaffold as an alternative form of therapy for patients with heart failure. 2015-2018; (consortial project; coordinator of research task - 200 000 Euro - at Jagiellonian University)

III. Previously Completed



POIG 02.01.00-12-064/08- Molecular biotechnology for health. European Funds for Regional Development. September 2008-December 2012 (total support ~ 7 million Euro) – coordinator of the project - <http://www.wbbib.uj.edu.pl/bmz/en/>



No. POIG 01.02-00-109/99 'Innovative methods of stem cell applications in medicine (2009-2013) – coordinator of the project at the Jagiellonian University (total contribution to Jagiellonian University - 4 mln Euro).

2. 347/N-INCA/2008/0 - Effect of deficiency and overexpression of heme oxygenase-1 on mRNA and microRNA transcriptome in keratinocytes and lung cancer: significance for angiogenesis and tumor growth (Polish-French Project) November 2008- November 2012.- Principal investigator
3. Nr 311/N-COST/2008/0 - Role of heme oxygenase-1 in pro-angiogenic activity of thymidine phosphorylase: significance for anti-cancer anti-angiogenic therapy October 2008-October 2012. - Principal investigator
4. N N301 009639 – Role of Nrf2 transcription factor in endothelial progenitor cells. 2010-2012. PI. PhD project (Urszula Florczyk – PhD student)
5. N 301 080 32/3156 – *Role of heme oxygenase-1 in endothelial progenitor cells: significance for wound healing* March 2007 – March 2010 – Principal investigator
6. European Vascular Genomics Network –LSHM-CT-2003-503254 (2005 – 2008 – head of the research group)
7. 512/6. PR UE/2008/7 - Role of heme oxygenase-1 in stimulation of therapeutic angiogenesis in hind limb ischemia in mice. 2007-2008. – Principal investigator
8. 3. N N401 0546 33 – Role of heme oxygenase-1 in regulation of expression and activity of metalloproteinases (MMPs in human cancer cell line NCI-H292 and primary murine fibroblasts - PhD project. September 2007 – March 2009 – Principal investigator (Slawomir Golda – PhD student)

9. N 302 020 31/2008 – Application of bicistronic AAV vectors harboring VEGF and FGF-4 for stimulation of wound healing in db/db mice - PhD project. September 2006 – March 2008 – Principal Investigator (Agnieszka Jazwa – PhD student).
10. PBZ-KBN 107/P04/2004
Targeting tumor cells proliferation, survival and tumor angiogenesis by modulation of oxidative stress: role of heme oxygenase -1
17th November 2004-16th November 2007 - it was a part of a solicited project "Investigation on the molecular host-tumor cells interactions and their applications for creation of new tools for anti-tumor therapy" - Principal Investigator: Józef Dulak (also, co-ordinator of a solicited project)
11. PBZ-KBN-096/P05/2004-
Construction and application of bicistronic vectors for overexpression of VEGF and FGF-4 -
17th November 2004-16th November 2007 - it is a part of the solicited project "Gene therapy for ischemic heart disease" (REGENT). Principal Investigator: Józef Dulak
12. PBZ-KBN 097/P05/2004 - *Role of heme oxygenase-1 (HO-1) in cytoprotective and anti inflammatory effects of pentoxifylline.*
December 2004-December 2007 -- it is a part of a solicited project: "Therapeutic strategies in preterm delivery"
Principal Investigator: Alicja Józkwicz , (participant : Józef Dulak)
13. KBN no 3 P04B 016 25. 01/09/2003 – 28/02/2005
Doxycycline-regulated vectors for overexpression of human biliverdin reductase and superoxide dismutase 1.
(PhD grant). Principal Investigator - Józef Dulak, PhD student - Jaroslaw Cisowski
14. KBN No. 3P04A 049 22 4/01/2002-3/31/2005
The role of nitric oxide and heme oxygenase in angiogenic activity of vascular endothelial growth factor
PI: Dulak
15. KBN No. 1 6P04B 013 21 10/01/2001-9/31/2004
Cloning and expression of human catalase and copper,zinc superoxide dismutase genes.
PI: Podhajska (University of Gdańsk, Poland)
Co-Principal Investigator – Dulak
16. KBN No 1197/P05/98/14 4/01/1998-3/31/2001
The role of nitric oxide and vascular endothelial growth factor in restenosis – the effect of experimental gene transfer PI- Dulak
17. KBN No 4P05A 108 17 10/01/1999-9/30/2002
The angiogenic role of factors activated by peroxisome proliferator activated receptors α (PPAR α)
PI – Józkwicz
Co-Principal Investigator – Dulak

Invited lectures (selected)

2019

1. *Engineering of human iPSC-derived cardiomyocytes for therapy and disease modeling. Induced pluripotent stem cells (iPSC: from disease models to mini organs.* Le Studium Conference, Tours, 30th January 2019

2. *Redox and muscle regeneration: strategic role of microRNAs*. 21st ISANH Redox Congress & 4th ISANH Middle East World Congress, Muscat Oman, 4th March 2019
3. *Induced pluripotent stem cells-derived cardiomyocytes improve heart function in murine models of myocardial infarction*. 3rd ESM-EVBO Conference, Maastricht, The Netherlands, 17th April 2019
4. *New genetic modifiers of Duchenne muscular dystrophy*. Workshop COST Euro-Laminopathies, 28th May, Wrocław
5. *Engineering of human iPSC-derived cardiomyocytes for therapy*. 6th LIA Workshop, Warszawa 4th June 2019
6. *Strategie regeneracyjne w niewydolności serca: błędy i racjonalne możliwości*. Międzynarodowa Konferencja Kardiologiczna, Zabrze 7 czerwca 2019
7. *Nrf2 in Duchenne muscular dystrophy*. 21st ISANH International Conference, Paris, 20th June 2019
8. *Engineering of human iPSC-derived cardiomyocytes for therapy and disease modeling*. 44th FEBS Congress, 9th July Kraków,
9. Nitric oxide and heme oxygenase-1 in cancer: mechanisms, effects and therapeutic possibilities. 7th Conference on Nitric Oxide in cancer and beyond, New York, 21st September 2019
10. Truth in science and medicine: hope and hype of stem cell therapie. FREEDOM IN CULTURE, 2. 4TH OCTOBER 2019, COLLEGIUM MAIUS, Jagiellonian University,
11. *Myocardial infarction and heart failure: novel mechanisms and potential of pluripotent stem cells-based therapies*. Queens University, Belfast, 14th October 2019
12. *New mechanisms of muscle injury and repair*. Nencki Institute for Experimental Biology, 17 October 2019
13. *Terapie komórkowe: nadzieje, złudzenia, rzeczywistość*. Komitet Biotechnologii PAN, Warszawa, 29 października 2019
14. *microRNAs: from cancer to dystrophy*. French0Polish workshop, Kraków, 15th November 2019
15. *New genetic modulators of Duchenne muscular dystrophy*. Masaryk University, Brno, 21 November 2019
16. *Terapie komórkowe: nadzieje, złudzenia, rzeczywistość*. Komitet Bioetyki PAN, 26 listopada 2019
17. *Terapie komórkowe w niewydolności serca*. XXIV Sympozjum Sekcji Kardiologii Eksperymentalnej PTK, Tomaszowice, 29 listopada 2019
18. *Co zawdzięczamy tegorocznym noblistom czyli co nieco o terapii genowej i komórkowej w niedokrwieniu mięśni nóg i serca*, Towarzystwo Naukowe Warszawskie, Warszawa, 10 grudnia 2019
19. *New mechanisms of muscle injury and repair*. Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Vienna 17th December 2019
20. *Terapie komórkowe: nadzieje, złudzenia, rzeczywistość*. Krajowa Rada Transplantacyjna, Warszawa 19 grudnia 2019

2018

1. *Targeting heme oxygenase-1 for anti-cancer therapy*. Nanjing University, 17th December 2018
2. *Targeting heme oxygenase-1 for anti-cancer therapy*. Zhejiang University, Hangzhou, 16th December 2018
3. *Targeting heme oxygenase-1 for anti-cancer therapy*. Huashan Hospital, Fudan University, Shanghai, 13th December 2018
4. *Heme oxygenase-1 in stem cells: more than cytoprotection*. 10th International Conference on Heme Oxygenase 2018, Seoul, Korea, 3rd November 2018
5. *Novel mechanisms of heart and skeletal muscle repair and regeneration*. KAIST, IBS Centre for Vascular Research, Daejeon, Korea, 30th October 2018
6. *Molecular profiling of regulatory T cells in pulmonary sarcoidosis*. Centre Hospitalier Universitaire Vadouis, Lausanne, Switzerland, 18th October 2018
7. *Heme oxygenase-1 in Duchenne muscular dystrophy: interactions with nitric oxide synthase pathway in satellite cells differentiation*. Therapeutic application of nitric oxide in cancer and inflammatory-related disorders. Siena, October 5, 2018.
8. *Silencing of miR-378a attenuates dystrophic phenotype in mdx mice*. Molecular mechanisms of muscle wasting during aging and disease. Monte Verita, Switzerland, September 26, 2018.
9. *Targeting inflammation for treatment of Duchenne muscular dystrophy*. BIO 2018, The Congress of Polish Biochemical Society and Polish Cell Biology Society, Gdańsk, 20th September 2018.
10. *Role of Nrf2 and Hmox1 in satellite cells differentiation*., 2nd Munich ROS Meeting, Germany, 7th July 2018
11. *Regenerative functions of heme oxygenase-1 in heart and muscles: more than cytoprotection*. 1st EVBO-ESM Summer School, Dresden, 4th July 2018.
12. *Heme oxygenase-1 and satellite cells in muscle regeneration: cross-talks with microRNAs*. 20th International Conference on Antioxidants – Paris-Redox; Paris; 25 June 2018.
13. *Inflammation and microRNAs in muscle regeneration*. 5th LIA Meeting, Orleans, France, 31 May 2018.
14. *Heart injury and repair: hopes and hypes of cell therapies*. Pomeranian Medical University, Szczecin, Poland, 18th May 2018.
15. *Induced pluripotent stem cells and their potential in regenerative medicine – Pro*. Frontiers in Cardiovascular Biology (FCVB), Vienna, 20 April 2018.
16. *Heart and skeletal muscle injury and repair: new mediators of inflammation and stem cell differentiation*. Centre for Research in Medical Devices, National University of Ireland, Galway, 5th April 2018.
17. *Heart and skeletal muscle injury and repair: new mediators of inflammation and stem cell differentiation*. Trinity Biomedical Science Institute, Trinity College, Dublin, Ireland, 4th April 2018.

18. *Heme oxygenase-1 and microRNAs in heart and skeletal muscle repair and regeneration*. International Institute for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy, 20 February
19. *Induced pluripotent stem cells in research and therapy* – Warsaw Medical Institute, Warszawa, 14th February 2018.
20. *Heart-on-a-chip based on induced pluripotent stem cells technology for personalized medicine*. H2020-MSCA-RISE-2017 CISTEM kick off meeting – Paris, 24th January 2018

2017

1. *Heart injury and repair: hopes and hypes of cell therapies and biomaterials*. 26th conference on Biomaterials in Medicine and Veterinary Medicine. Rytro, 13 October 2017
2. *Heme oxygenase-1, microRNAs and the heart: new targets for therapy*. 31 European Association of CardioThoracic Surgeons meeting, Vienna, 7th October 2017
3. *microRNAs in stem cells differentiation: skeletal muscle and the heart*. Ludwig Boltzmann Lecture, Vienna University, AKH, 6 October 2017
4. *Regenerative medicine in cardiac diseases: a scientist's point of view*. XXI International Congress of the Polish Society of Cardiology, Katowice, 23rd September 2017
5. *Science and medicine in an era of populism: a case of stem cell therapies*. EUROBIOTECH, 7th European Congress on Biotechnology, Krakow, 14th September, 2017
6. *New modifiers of Duchenne muscular dystrophy*. EUROBIOTECH, 7th European Congress on Biotechnology, Krakow, 11th September, 2017
7. *microRNAs in muscle diseases*. LIA Meeting, Krakow, 26th June 2017
8. *Heme oxygenase-1 affects progression of Duchenne muscular dystrophy in mice and influences satellite cells differentiation*. Gordon Research Conference on Myogenesis, Il Ciocco, Barga, Italy, 15th June 2017
9. *microRNAs in skeletal muscle regeneration*. 2nd Joint ESM EVBO Meeting, Geneva, Switzerland, 1st June 2017
10. *Stem cells in research and therapies; hypes and hope*. Progress in Development Biology, Polish Academy of Arts and Sciences, Krakow, 26th May 2017
11. *Stem cell therapies in cardiovascular disease: controversies, hypes and hope*. 12th Vienna Interdisciplinary Symposium on Aortic Repair, Vienna, April, 20, 2017.
12. *Nie wszystko złoto co się świeci: czym są, a czym nie komórki macierzyste i co naprawdę potrafią leczyć*. VI Konferencja Biologii Molekularnej, Łódź, 6 kwietnia 2017.
13. *Inflammation and microRNAs in skeletal muscle damage and regeneration*. Muenster University, 3rd April, 2017
14. *Heme oxygenase inhibition in cancer: new tools and targets*. 9th International Conference on Contemporary Oncology, Poznań, 23 March 2017

15. *Role of microRNAs in muscle regeneration and Duchenne muscular dystrophy*. School of Molecular Medicine, Warszawa, 15th March 2017
16. *Modulation of muscle damage in Duchenne muscular dystrophy by heme oxygenase-1*. 49th Winter School of the Faculty of Biochemistry, Biophysics and Biotechnology, Zakopane, 16th February 2017.

2016

1. *New molecular and physiological mechanisms in Duchenne muscular dystrophy*. Polish Physiological Society, Krakow, 26 January 2016
2. *Gene editing: should we be afraid of it?* Winter School of the Faculty of Biochemistry, Biophysics and Biotechnology, Zakopane, 17th February 2016
3. *Gene editing: should we be afraid of it?* 2nd Winter School of the Department of Medical Biotechnology, Rytro 27 February 2016.
4. *Cross-talk between microRNA and antioxidant genes in Duchenne muscular dystrophy* 3rd LIA Workshop: microRNAs: mediators of differentiation and biomarkers of diseases. Orleans, 9th May, 2016
5. *Medycyna regeneracyjna w roku 2016: osiągnięcia, wyzwania, możliwości*. XXIII Międzynarodowa Konferencja Kardiologiczna, Zabrze, 2 czerwca 2016.
6. *Indukowane pluripotencjalne komórki macierzyste – nowe narzędzie medycyny personalizowanej i precyzyjnej*. XXIII Międzynarodowa Konferencja Kardiologiczna, Zabrze, 2 czerwca 2016.
7. *Heme Oxygenase in stem cells: role in development, physiology and diseases*, Stanford University, 27th June 2016
8. *Induced pluripotent stem cells as tools for research and therapy*. 17th European Congress on Biotechnology, Krakow, Poland, 4th July 2016
9. *microRNA in vessels and muscles regeneration*. Frontiers in Cardiovascular Biology 2016, Florence, Italy, 10th July 2016.
10. *Heme oxygenase-1 and microRNAs in cardiovascular functions and diseases*. University of California Los Angeles, 22nd July 2016
11. *Induced pluripotent stem cells for research and therapy: perspectives and challenges*. BIO 2016 - 2nd Congress of Polish Biochemistry, Cell biology, Biotechnology and Bioinformatics, Wrocław, 14 September 2016.
12. *Heme oxygenase-1 and microRNAs interaction in Duchenne muscular dystrophy*. 9th International Conference on Heme Oxygenase Prague 2016; September 15th
13. *Role of heme oxygenase-1 and microRNAs interactions in differentiation of muscle stem cells: a case of rhabdomyosarcoma and Duchenne muscular dystrophy*. Beth Israel Deacones Hospital, Harvard Medical School, 3th November 2016
14. *Hypoxia as a tool and target for treatment of ischemic tissue damage*. OXYGENALIA 2016. 18th November; Krakow
15. *Komórki macierzyste w badaniach i terapii: możliwości, perspektywy, wyzwania*. Politechnika Łódzka; 29 listopada 2016

2015

1. *Heme Oxygenase-1 in stem cells differentiation*. Tohoku University – Sendai, Japan, 30.09.2015
2. *Heme oxygenase-1 in myoblasts differentiation: a link to rhabdomyosarcoma and Duchenne muscular dystrophy*. National Cancer Institute – Tokyo, Japan - 29.09. 2015

3. *Cross talk between antioxidant genes and microRNAs in blood vessel formation*. World Congress of Microcirculation, Kyoto, Japan – 25.09.2015
4. *microRNAs in tissue regeneration and revascularization*. European Federation of Physiological Societies, Kaunas, Lithuania, 28.08.2015
5. *Skeletal muscle and vessel regeneration: role of antioxidant genes and microRNAs*. European Vascular Biology Organisation – European Microcirculation Society – Pisa, Italy – 03.06.2015
6. *Heme oxygenase-1 and carbon monoxide in stem cells differentiation*. COST Action meeting on Gasotransmitters – Athens, Greece – 02.05.2015
7. *Skeletal muscle and vessel regeneration: heme oxygenase-1 and microRNAs cross-talk*. 1st International Munich ROS Meeting, Munich, 23 April 2015
8. *Skeletal muscle and vessel regeneration: interplay between inflammation and microRNAs*. Imperial College, London – 27.02.2015
9. *Skeletal muscle and vessel regeneration: interplay between inflammation and microRNAs*. King's College, London – 26.02.2015
10. *Adult stem cells: hopes and hypes of regenerative medicine: can nanotechnology help?* Stem cell meeting – Academy of Mining and Metallurgy, Krakow, 13.10.2015
11. *Janus face of molecular pathways in cancer: a case of Nrf2 and heme oxygenase-1*. The 42nd ISOBM Annual Congress. Oncology in the Biomarker Era: Biology – Diagnostics – Therapy. Zakopane, 06.10.2015
12. *Transgenic and knockout animals in research on reparative and pathological angiogenesis*; POLASA Meeting, Warsaw, 08.09.2015,
13. *Perspectives for heme oxygenase-1 in medical biotechnology*. Perspectives in medical biotechnology, Krakow, 23.05.2015
14. *Alternative methods for research on animals*. Conference on: Humans and animals: balancing the interests: Warszawa, 05.06.2015
15. *Komórki macierzyste w badaniach podstawowych w medycynie: możliwości, nadzieje i nieporozumienia*. I Studencka Konferencja Genetyczna „Genomica”, Kraków, 25 kwietnia 2015
16. *Terapie komórkami macierzystymi: możliwości, nadzieje, nadmierne oczekiwania*. IV studencka Konferencja biologii Molekularnej, Łódź, 26 marca 2015
17. *Adult stem cells: hopes and hypes*. Winter School of the faculty of Biochemistry, Biophysics and Biotechnology, 13.02.2015, Zakopane

2014

1. *Synthetic biology in gene and stem cell therapies*. Symposium on synthetic biology – Warszawa, Ministry of Science and Higher Education, 25 November 2014
2. *Heme oxygenase-1 in stem cells: so many roles for an „old-fashioned” enzyme*. University of Buenos Aires, 17 November 2014
3. *Nowe mechanizmy angiogenezy (New mechanisms of angiogenesis)*. Symposium devoted to Professor Czeslaw Cierniewski, Łódź, 24 October 2014.
4. *Nrf2 exerts inhibitory effect on osteoclastogenesis: a link to miR-378*. 8th Meeting on Heme Oxygenases. Sydney, 9 October 2014
5. *Adult stem cells: hopes and hypes of regenerative medicine*. BIO 2014, Congress of Polish Biochemical, Cell Biology and Biophysical Society, Warszawa 12 September 2014
6. *In vivo imaging in experimental gene therapy and cancer research*. 48th Symposium of Polish Histochemical and Cytochemical Society, Wisła, 4th September 2014
7. *Role of antioxidant genes and microRNAs in regeneration after hind limb ischemia*. Federation of European Physiological Societies, Budapest, 29th August 2014

8. *Stem cells: hopes and hypes*. Science during vacation, Jurata, Polish Academy of Sciences, 7th August 2014
9. *HO-1 and vascular cell function* – *Frontiers in Cardiovascular Biology 2014, Barcelona, 5th July*
10. *microRNA in tumors: mediators of differentiation and angiogenesis*. 40 Meeting of Polish Society of Experimental and Clinical Immunology. Wrocław, 27th June 2014
11. *Biotechnologia medyczna: terażniejszość i perspektywy*. Debata uniwersytecka wobec trudnych problemów społecznych. *Pracownia Pytań Granicznych; Uniwersytet im. Adama Mickiewicza w Poznaniu . 12 czerwca 2014*
12. *Recent advances in angiogenesis: microRNAs and metabolism*. Techniques in analysis of cancer vascular biology. Warsaw Medical University, 6 June 2014
13. *Komórki macierzyste: nadzieje i złudzenia*. KOnferencja doktorantów Collegium Medicum UJ, Kraków, 30th May 2014
14. *New mechanisms of muscle differentiation and regeneration*. XXI International Cardiological Conference, Zabrze, 29 May 2014
15. *Role of Nrf2 and HO-1 in endothelial and myogenic differentiation*. International Symposium on Vascular Biology and Medicine, Sendai, Japan, 18th April 2014
16. *Absence of heme oxygenase-1 influences cardiac remodeling following myocardial infarction*. 18th International Vascular Biology Meeting, Kyoto, 17th April, - (session talk and chair)
17. *Gene therapy for muscle regeneration*. Nencki Institute for Experimental Biology. Warsaw. 31st March 2014
18. *microRNA in myogenic differentiation and muscle regeneration: a link to cancer?* School of Molecular Medicine, Warsaw 19th March, 2014.
19. *Role of Nrf2 transcription factors in non-inflammatory and ischemia driven neovascularization*. Angiogenesis and Leukocytes in Atherosclerosis, Geneva, Switzerland, 31st January 2014

2013

1. *microRNAs: perspectives for research, diagnostics and therapy*. 1st Workshop of the Polish-French Associated Laboratory (LIA) – microRNAs: mediators of differentiation and biomarkers of diseases. Paris, 10th December 2013.
2. *Angiomirs and antioxidant genes in non-small cell lung carcinoma*. BIT's 2nd Lung Cancer Summit, Rome, 4th December 2013.
3. *microRNAs in tumor development and angiogenesis: cross-talk with heme oxygenase-1*. Universite de Reims Champagne-Ardenne, 27th November 2013
4. *Nrf2, heme oxygenase-1 and microRNAs cross-talk in stem cells and muscle regeneration*. Institut de Genetique et Development de Rennes, Universite Rennes, 26th November 2013.
5. *Role of microRNAs in muscle regeneration and tumor formation*. Paris Cardiovascular Research Center, 25th November, 2013
6. *Stem cells: the holy grail of medical biotechnology*. Adam Mickiewicz University, Laboratory of Borderline Questions, 13 November 2013.
7. *Persepctives of gene and cell therapy*. Faculty of Biology and Environmental Protection. Łódź, 12 November 2013
8. *Cellular patient: on application of induced pluripotent stem cells in medicine*. Polish Academy of Sciences, Commission on Medical Sciences, Krakow, 30 October 2013.
9. *microRNAs and antioxidant genes in stem cells differentiation*. Ruedbeck Laboratory, Uppsala Universiteit, 24th October 2013.
10. *Stem cells: hopes and hypes*. Institute of Biochemistry and Biophysics. Warsaw, 22nd October 2013
11. *Stem cells: hopes and hypes*. ScanBalt Meeting, Gdansk, 19th October 2013.

12. *Perspectives of gene and cell therapy*. Inaugural lecture on the opening of the academic year at the Faculty of Biology, Gdańsk University, 3 October 2013
13. *Heme oxygenase-1 and microRNAs: cross-talks in stem cells and cancers*. University of Alabama at Birmingham, 26th September, 2013.
14. *Cross-talk between heme oxygenase-1 and microRNAs in stem cells and cancers*. University of Mississippi, Jackson, 25th September 2013.
15. *Role of antioxidant genes and microRNAs in adult stem cells differentiation*. Columbia University, New York, 23rd September 2013
16. *Role of microRNAs in tumorigenesis and angiogenesis: 48th Meeting of Polish Biochemical Society*, Torun, 4th September 2013.
17. *Molecular mechanisms of inflammation-driven blood vessel formation*. FEBS 2013, 8th July, St, Petersburg, Russia
18. *Adult stem cells in vessels and muscles regeneration: possibilities and limitations*. Baltic Stem Cells Meeting, Szczecin, 1st June 2013.
19. *Stem cells in research and medicine: perspectives, difficulties, misunderstandings*. Conference on Biomedical research: ethical, social and law aspects. Gdańsk, 17 May 2013.
20. *Epigenetic mechanisms in cells differentiation and tumor development: role of microRNAs*. NOVARTIS, Warsaw, 17th April 2013.
21. *The role of microRNAs in cancer: cross talk with antioxidant genes*. University of Rochester, 27th March 2013.
22. *From stem cells to cancer: cross talks with microRNA*. Beth Israel Deacones Medical Center, Harvard Medical School, 25th March 2013
23. *microRNAs-based therapies: potential targets for anti-cancer treatments*: School for Molecular Medicine, Warsaw, 18th March 2013.
24. *Cross-talk between antioxidant genes and angiogenesis in microRNAs in angiogenesis*. Journee de Sciences de la Vie 2013, de Creteil, CNRS – Paris – 26 February 2013
25. *microRNAs in tumor angiogenesis: tools and targets*. XL Winter School of the faculty of Biochemistry Biophysics and Biotechnology, Zakopane 16th February 2013.
26. *From stem cells to cancer: role of microRNA*. University of Groningen Medical Center, 14th January 2013

2012

1. *The role of microRNAs in stem cells differentiation: unexpected effects of protective genes*. XI International Symposium: Molecular basis of pathology and therapy in neurological disorders. 23rd November, Warszawa
2. *Janus face of heme oxygenase-1 in tumors: cross-talks with microRNAs*. 2nd South American Spring Symposium in Signal Transduction (SISTAm 2012), 4-9th November, Bariloche, Argentina, 2012
3. *Noncoding RNA and stem cells differentiation*. Le Studium Conference, Orleans, 24-25 September 2012
4. *From stem cells to cancer: role of microRNAs* 25e Colloque Biotechnocentre, Domaine de Seillac, 12 Octobre 2012
5. *Gene therapy on demand: site specific regulation. 50th years of gene therapy: the contribution of Professor Waclaw Szybalski to science and humanity*. Krakow, Polish Academy of Arts and Sciences, 29th September 2012.
6. *HIF-regulated gene therapy for hind limb ischemia*. HypoxiaNet Meeting, Essen, Germany, 23rd September 2012
7. *Novel hallmarks of cancer and targets for chemoprevention: role of microRNAs*. 47th Polish Biochemical Society Meeting & 1st Polish-German Biochemical Symposium, Poznan, 14th September, 2012

8. *Role of heme oxygenase-1 in regenerative medicine*. 3rd Tissue Engineering and Regenerative Medicine Meeting (2012 TERMIS), Vienna, 7th September 2012
9. *Nrf2 and HO-1 as the targets for chemoprevention and anti-cancer therapy*. Natural Anticancer Drugs, 2nd July 2012, Olomouc
10. *microRNA and HO-1 in stem cells differentiation*. 7th International Meeting on Heme Oxygenases and Related Enzymes, Edinburgh, 28th May-1st June 2012
11. *Role of microRNAs in tumor development*. Faculty of Biotechnology, Rzeszow University, Werynia, 26th April 2012.
12. *microRNAs in stem cells and diseases*. From gene to phenotype – interdisciplinary research in molecular biology and biomedicine, Warsaw, 29 March 2012
13. *Regenerative medicines: relations and problems between science and religion*. Bialystok Medical University, 6th March 2012
14. *New strategies in medical biotechnology*. 49th Winter School of the Faculty of Biochemistry, Biophysics and Biotechnology, Zakopane, 5th February 2012.
15. *From stem cells to tumors: new mechanisms and therapeutic targets*. Institute of Immunology and Experimental Therapeutics, Wroclaw, 1st February 2012.
16. *Heme oxygenase-1 as a modulator of stem cells functions and differentiation*. Gastransmitters COST Action Meeting, Madrid, 19-20th January 2012

2011

1. *Effect of hypoxia and heme oxygenase-1 on differentiation of endothelial and muscle progenitor cells*. HypoxiaNet Meeting, Davos, Switzerland, 11th January 2011
2. *Significance of antioxidant genes for regenerative medicine*. University of Linköping, April 28th, 2011
3. *From stem cells to cancer: novel regulators of microRNA*. 5th Polish-French Conference on Cancer Biology and Therapy, Paris, France, 30th May 2011
4. *Oxidative stress in vascular system: basic concepts and novel ideas*: CBCS Summer School on Cardiovascular Sciences “From Basic Mechanisms to Clinical Application” Nicea, France, 14th June 2011
5. *Stem cells for regenerative medicine and drug discovery* - 10th Congress of the European Association for Clinical Pharmacology and Therapeutics, Budapest, Hungary, 27th June 2011
6. *Role of Nrf2 and heme oxygenase-1 in tumor growth* 14th Carotenoid Conference, Kraków, 21st July 2011
7. *Gaseous mediators of angiogenesis*. 2nd Congress of Polish Biochemistry and Cell Biology, Kraków, 6th September 2011
8. *Cross-talk between transcription factors in hypoxia-dependent angiogenesis*. University of Grenoble, France, 6th October 2011
9. *Gene therapy for wound healing*. Eurobiotech 2011 & 4th Polish Congress of Biotechnology, Kraków, 15th October 2011
10. *Role of antioxidant gene in angiogenesis*. Pacific Meeting for Vascular Biology, Jeju Island, Korea, 30 October 2011
11. *New mechanisms of stem cells differentiation: effect of heme oxygenase-1 on microRNAs and transcription factors*. Jeju National University Jeju Island, Korea, 2 November 2011
12. *The role of heme oxygenase-1 and Nrf2 in response to ochratoxin-A induced kidney injury*. Korean Society for Toxicology, Jeju University Jeju Island, Korea, 4th November 2011
13. *Role of heme oxygenase-1 in angiogenesis and stem cells differentiation*. Ludwig Boltzman Institute for Experimental and Clinical Traumatology, Wien, 28th November, 2011

2010

1. Visiting professorship to Japan – fellowship from the Japanese Society for the Promotion of Science (6 weeks, August-September 2010).
2. University of Louisville, Louisville, USA, 6 May 2010
3. Burke Medical Research Institute, Cornell University, New York, 1st June 2010
4. World Pharma Congress 2010 – Copenhagen, Denmark – 21.07.2010
5. COST “Angiokem” Summer School – Rhodos, Greece, 26-30.09.2010 –
6. Universidad Autonoma de Madrid, Spain – 14.10.2010
7. Symposium “Regulatory mechanisms of inflammation” – Valencia, Hiszpania – 15.10.2010
8. 13th IMPERIAL COLLEGE LONDON SYMPOSIUM on „Vascular Endothelium: Role In Disease Pathogenesis And As A Therapeutic Target”. London, 02.12.2010
9. University of Buenos Aires – 22.10.2010
10. SISTAM 2010, “The First South American Spring Symposium in Signal Transduction and Molecular Medicine”, Los Cocos, Cordoba, Argentina, 24-28.10.2010
11. Progress in Medical Biotechnology, Pecs, Hungary, – 29.11. 2010
12. German Diabetes Center – Duesseldorf, Germany – 9 December 2010.

2009

1. First International Conference on Metal Chelation in Biology and Medicine, Bath, UK, 12.12.2009
2. University of Bristol, UK, 11.12.2009
3. Virginia Commonwealth University, Richmond, USA, 05.10.2009
4. Heme Oxygenases in biology and Medicines, 6th International Congress, Miami, Floryda USA, 01.10.2009
5. 4th European Vascular Biology Organisation Meeting, Marsylia, Francja, 15.09.2009
6. 5th Joint Meeting of the European Tissue Repair Society & The Wound Healing Society, Limoges, France, 28.08.2009
7. CNRS, Orleans, France, 19.06.2009
8. University of Alabama at Birmingham, USA, 18.05.2009
9. University of Tours, France 09.02.2009

2008

1. International Congress of Cell Biology, Seoul, Korea, 8th October, 2009
2. Samseong Meeting, Wankgong University, Iksan, Korea, 13th October, 2008
3. EVGN Meeting, 24-27.11.2008, Bad Hofgastein, Austria
4. Eurobiotech 2008, Krakow, 19.10.2008
5. XIII Congress of Polish Society of Experimental and Clinical Immunology, Kraków, 15 May (plenary lecture)
6. ANGIOKEM_Cost Meeting, Strasbourg-Molsheim, 8 marca 2008
7. East Carolina University, Greenville, USA, 13.02.2008
8. CNRS, Orleans – 29.01.2008

2007

1. ANGIOKEM, COST Meeting, Hannover, 22. 11.2007.
2. New York Medical College Valhalla, Valhalla-New York, 13.11.2007
3. University Paris VII, Jaqcques Monod Institute, Paris 7 November 2007

4. EVGN Summer School, Smygehus, Sweden, 23 August 2008
5. University Charite, Berlin 24. V. 2007.
6. Vascular biology meeting, Brixen, Italy. 1.V. 2007
7. Al Virtanen Institute, Kuopio University, 02.04.2007

13. Teaching activities:

Courses:

1. Gene therapy: principles and perspectives - 30 hours/winter semester
2. Medical Biotechnology – spring semester, 15 hours
3. Molecular mechanisms of angiogenesis - 45 hours/spring semester (course designed and taught from 2001-2009)
4. Seminars for students of MSc programme – 30 hours/winter semester

PhDs (completed):

- 2005 – Jarosław Cisowski
2006 – Agnieszka Loboda
 Barbara Wegiel (co-promotor with Dr Fritz Bach)
2007 - Joanna Węgrzyn (co-promotor with Dr Andrew Larner)
2008 - Agnieszka Jaźwa
2009 – Magdalena Szelag (co-promotor with Dr Andrew Larner)
 – Sławomir Gołda
2010 – Karol Szczepanek (co-promotor with dr Andrew Larner)
2012 – Urszula Florczyk
 Guillaume Collet (University of Orleans; co-promotor with prof. Claudine Kieda)
2013 – Klaudia Skrzypek (co-promotor with prof. Claudine Kieda)
 Magdalena Tertil (co-promotor with prof. Chantal Pichon)
 Anna Stachurska (co-promotor with dr Agnieszka Łoboda)
2016 – Krzysztof Szade -
 Jacek Stepniewski
2017 – Bart Krist
2019 – Mateusz Tomczyk (co-promotor with Dr Agnieszka Jaźwa-Kusior)

PhD students:

- Mateusz Jez – 5th year student
Iwona Bronisz – 4th year student
Kalina Andrysiak – 3rd year student
Alicja Martyniak – 1st year student

Master of Science (completed): 45