

JOLANTA SKALSKA, Ph.D.

Nationality: Polish

Current Status: Permanent U.S. Resident

213.304.9491

Jolanta_Skalska@urmc.rochester.edu

First language: Polish, English

Other languages: German

EDUCATION

2001 – 2006 - PhD in Biochemistry

07/2000 - M. Sc degree in Molecular Biology

1995 – 2000 - Adam Mickiewicz University in Poznan; Department of Biology

RESPONSIBILITIES:

- a) work with laboratory animals: mice and rats
- b) isolated mitochondria
 - light scattering measurements
 - spectrofluorometric measurements of mitochondrial membrane potential indicators (DASPMI, Safranin, Rhodamine, TMRE)
 - measurements of mitochondrial respiratory rate with Clark electrode
 - Ca^{2+} measurements with the fluorescent probe Calcium Green – 5N.
 - submitochondrial particles (SMP) preparation from rat and mice skeletal muscle
- b) cell cultures (adherent and in suspension: large cell lymphoma, skeletal muscle cell lines, glioma cell lines)
 - lipofectamine transfection
 - siRNA transfection
 - fluorescent microscopy techniques with the use of green fluorescence protein (mito-GFP), TMRE, FURA – 2, JC-1
 - immunochemistry staining technique
 - isolation of subcellular fractions including mitochondria
- a) myofiber isolation from *flexor digitorum brevis* of CD1 mice
- b) protein biochemistry
 - protein electrophoresis and detection on PAGE gels and 2D gels
 - protein cloning in *E. coli* system
 - protein purification with His-tag label by metal ion affinity chromatography
 - autoradiography analysis of L30 protein and 5S RNA complexes
 - Western blotting technique
 - flow cytometry
- e) Equilibrium binding essay with radioactivity labeled ligands
- f) General skills:
 - managing the laboratory
 - working knowledge of PowerPoint, Excel, Word, Graph Pad, Corel and Photoshop program
 - data presentation (oral and research papers)
 - teaching skills (certificated by Polish Ministry of Education and Science)

PROFESSIONAL EXPERIENCE

09/2007- current: postdoctoral Research Associate in James P. Wilmot Cancer Center; project: **mechanism of action of chemotherapeutic drugs (auranofin, parthenolide, CDDO, imerov)** in cancer cells. University of Rochester Medical Center, 602 Elmwood Ave.

Imexon) in cancer cells. University of Rochester Medical Center, 605 Elmwood Ave, Rochester NY, USA

05/2006-09/2007: postdoctoral Research Associate in the Department of Pediatrics, Division of Cardiology in collaboration with the Department of Pharmacology and Physiology, University of Rochester Medical Center, Rochester NY, USA, project: **heart mitochondria physiology**

2001-2006: graduate student in Polish Academy of Science; project: **interaction of potassium channels' effectors (anti-diabetic sulfonoureas, diazoxide) on mammalian mitochondrial function**

04/2005-06/2005: trainee, "Functional coupling between mitochondrial potassium channels and permeability transition pore in mouse skeletal muscle mitochondria" project capturing aspect of **muscle dystrophy**, the University of Padua, Italy

11/2004-12/2004: trainee, "Potassium ions transport in brain and muscle mitochondria – the basis for cell protection by potassium channel openers (KCOs)" project, the University of Bonn, Germany

11/2003-12/2003: trainee, "Effects of potassium channel effectors on permeability transition pore induction in skeletal muscle mitochondria", University of Padua, Italy

2003 – participant in European Science Foundation Workshop: "Trends in Mitochondrial Pharmacology and Genetics", Madralin, Poland

2002- participant in summer school: "Micro-spectroscopy: Monitoring Interactions and reaction in living cells" – FEBS Advanced Course, Wageningen, The Netherlands

2002- participant in The Baltic Summer School: "Signaling in Muscle Metabolism", Copenhagen, Denmark

2001- participant in FEBS Advance Course: "Molecular Dynamics of Membrane Biogenesis", Corsica, France

06/1998-06/2000: undergraduate student in Laboratory of tRNA Biochemistry; Institute of Bioorganic Chemistry; Polish Academy of Sciences in Poznan, Poland, project: **Purification and characterization of L30 ribosomal protein from *Lupinus lutheus* in *E. coli* expression system**

AWARDS AND HONORS

2009- Research Fellowship from Telethon-Italy

2006- *Cum Laude* honors for PhD dissertation entitled: "The interactions of potassium channel effectors with skeletal muscle mitochondria

2005- Award in Wlodzimierz Mozolowski Competition for oral presentation

2004- Training Fellowship from BRAINS foundation, Poland

2003- Research Fellowship from Federation of European Biochemical Societies

CONFERENCES:

- a) 51st American Society of Hematology Annual Meeting; New Orleans, LA, December 5-8, 2009 - poster presentation
- b) An AACR Special Conference in Cancer Research: Metabolism and Cancer; La Jolla, California, September 13-16, 2009 – poster presentation
- c) 51st Biophysical Society Meeting, Baltimore, Maryland, March, 3-7, 2007 – poster presentation
- d) XL Polish Biochemical Society Meeting in Lublin 19 – 23 September 2005, oral presentation
- e) EBEC 2004 - 13th European Bioenergetics Conference, August 21 – 26 2004, Pisa, Italy, poster presentation
- f) FEBS 2004 – 29th Congress of the Federation of European Biochemical Societies, Warsaw, Poland, poster presentation
- g) FEBS 2003 – 28th Congress of the Federation of European Biochemical Societies, Brussels, Belgium - poster presentation
- h) "Mitochondria Medicine 2003" June 11 – 14, 2003; San Diego, California – oral presentation

LIST OF PUBLICATIONS:

(cited 215+ times by peer-reviewed scientific articles by researches in at least 10 different countries including Brazil, China, Denmark, Germany, Iran, Italy, Mexico, Poland, South Korea and USA)

1. Skalska J., Bernstein S., Brookes P. (2010) Measurements of extracellular (exofacial) versus intracellular thiols. *Methods Enzymol* 474: 149-64
2. Debska-Vielhaber G., Godlewski M.M., Kicinska A., Skalska J., Kulawiak B., Piwonska M., Zablocki K., Kunz W.S., Szewczyk A., Motyl T. (2009) Large-conductance K⁺ channel openers induce death of human glioma cells. *J Physiology Pharmacol*: 60(4): 27-36
3. Skalska J., Brookes P.S., Nadtochiy S.M., Hilchey S.P., Jordan C.T., Guzman M.L., Briehl M.M., Maggirwar S.B. and Bernstein S.H. (2009) Modulation of cell surface protein free thiols: a potent novel mechanism of action of sesquiterpene lactone parthenolide. *PloS One*: 4(12) e8115
4. Ingraham C.A., Burwell L.S., Skalska J., Brookes P.S., Howell R.L., Sheu SS., Pinkert C.A. (2009) NDUFS4: Creation of a mouse model mimicking a complex I disorder. *Mitochondrion* 9: 204-210
5. Skalska J., Bednarczyk P., Piwonska M., Kulawiak B., Wilczyński G., Dolowy K., Kudin A.P., Kunz W., Szewczyk A. (2009) Calcium ions regulate K⁺ uptake into brain mitochondria: the evidence for a novel potassium channel. *Int J Mol Sci* 3:1104-1120
6. Feissner R.F., Skalska J., Gaum W.E., Sheu SS (2009) Crosstalk signaling between mitochondrial Ca²⁺ and ROS. *Front Biosci* 14: 1197-218
7. Skalska J., Piwonska M., Wyroba E., Surmacz L., Wiczorek R., Koszela-Piotrowska I., Bednarczyk P., Dolowy K., Wilczyński G.M, Szewczyk A., Kunz W.S. (2008) A novel potassium channel in skeletal muscle mitochondria. *Biochim Biophys Acta* 7-8: 651-9
8. Szewczyk A., Skalska J., Glab M., Kulawiak B., Malinska D., Koszela-Piotrowska I., Kunz WS. (2006) Mitochondrial potassium channels: from pharmacology to function. *Biochim. Biophys Acta* 1757(5-6):715-20
9. Skalska J., Debska-Vielhaber G., Glab M., Kulawiak B., Malinska D., Koszela-Piotrowska I., Bednarczyk P., Dolowy K., Szewczyk A. (2006) Mitochondrial ion channels. *Postepy Biochem* 52: 137-44
10. Skalska J., Debska G., Kunz W.S., Szewczyk A., (2005) Antidiabetic sulfonylureas activate mitochondrial permeability transition in rat skeletal muscle. *British Journal of Pharmacology* 145: 785-791
11. Kicinska A., Skalska J. and Szewczyk A., (2004) Mitochondria and big – conductance potassium channel openers. *Toxicology Mechanisms and Methods* 14:63 - 65
12. Debska G., Kicinska A., Dobrucki J., Dworakowska B., Nurowska E., Skalska J., Dolowy K., Szewczyk A. (2003) Large-conductance K⁺ openers NS1619 and NS004 as inhibitors of mitochondrial function in glioma cells. *Biochemical Pharmacology* 65: 1827 – 1834
13. Debska G., Kicinska A., Skalska J., Szewczyk A., May R., Elger C., Kunz W. S. (2002) Opening of potassium channels modulates mitochondrial function in rat skeletal muscle. *Biochimica et Biophysica Acta* 1556: 97 – 105.
14. Debska G., Kicinska A., Skalska J., Berest V., Szewczyk A. (2002) Mitochondrial Ion Channels in polish. *Postepy Higieny Medycyny Doswiadczalnej* 56: 315 – 321
15. Debska G., Kicinska A., Skalska J. and Szewczyk A. (2001) Intracellular potassium and chloride channels: An update. *Acta Biochimica Polonica* 48: 137 – 144

REFERENCES:

Available upon request

