

Igor Golić

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Education

- 2015 PhD in Biology, **University of Belgrade** - Faculty of Biology
Dissertation Topic: "Molecular basis of mitochondrial structural remodeling induced by calcium and insulin in rat brown adipocytes"
Advisor: Aleksandra B. Korac
- 2008 Diploma (equivalent to MSc) in Biology, **University of Belgrade** - Faculty of Biology

Academic Experience

- University of Belgrade** - Faculty of Biology
- 2016- Research Associate
- 2011-2016 Research Assistant (*Graduate Researcher*)
- 2010-2011 Research Trainee (*Graduate Researcher*)

Teaching Experience

- University of Belgrade** - Faculty of Biology
- 2011-2015 Graduate Student Instructor
Undergraduate course: *Advance Course in Cell Biology*

Grants, honors & awards

- 2018 Travel grant
NEUBIAS (*Network of European Bioimage Analysts*) Training School TS6
- 2017 Registration grant
Zürich Image and Data Analysis School 2017
- 2015 Best poster presentation
12th Multinational Congress on Microscopy. Eger, Hungary, Aug 23-28, 2015
- 2011 Registration grant
Mitochondrial Dynamics: From Mechanism to Disease. Sardinia, Italy, Sep 11-15, 2011
- 2009 Fellowship
Republic Foundation for the Development of Scientific and Artistic Youth

Courses & workshops

- 2018 NEUBIAS (*Network of European Bioimage Analysts*) Training School TS6 for Early Career Investigators. Szeged, Hungary.
- 2017 Zürich Image and Data Analysis School - ZIDAS2017. Zürich, Switzerland.
- 2014 The Belgrade Workshop on Farm Animal Proteomics - COST Action FA1002 and Faculty of Veterinary Medicine at University of Belgrade.
- 2012 Training course - Micromanipulation system and confocal microscope as powerful tools for the oocytes and embryo investigation - FP7 ReProForce Project. Sofia, Bulgaria.
- 2011 Biostatistics in practice - how to give meanings to numbers. Belgrade, Serbia.
- 2010 Advanced confocal microscopy workshop 2010. Brno, Czech Republic.
- 2010 GLP (Good Laboratory Practice) - High-quality standards using high-quality equipment. Belgrade, Serbia.

Professional Associations

European Microscopy Society
Mitochondrial Physiology Society
Serbian Biochemical Society
Serbian Biological Society
Serbian Microscopy Society
Serbian Society for Mitochondrial and Free Radical Physiology
Society for Free Radical Research - Europe

Projects

- 2014-2015 *Structural and functional study of mitochondrial complexes of oxidative phosphorylation*. Bilateral project between Serbia and France - "Partnership Hubert Curien/Pavle Savić".
- 2011- *White and/or brown: the importance of adipose tissue in maintaining overall redox-dependent control in physiological adaptations and disorders*. Project of Ministry of Education and Science of Republic Serbia #173055.
- 2011- *The role of reactive oxygen/nitrogen species in reproduction: possible use in treatment of human infertility*. Project of Ministry of Education and Science of Republic Serbia #173054.
- 2010 *Physiological, morphological and molecular mechanisms of thermoregulation in adaptive processes of changed homeostasis*. Project of Ministry of Education and Science of Republic Serbia #143050.

Publications & talks

SUBMITTED MANUSCRIPTS

JOURNAL ARTICLES

- 2017 Stacchiotti A, Favero G, Giugno L, **Golic I**, Korac A, Rezzani R. (2017) Melatonin efficacy in obese leptin-deficient mice heart. *Nutrients*, 9(12), 1323. [doi:10.3390/nu9121323](https://doi.org/10.3390/nu9121323).
- Pajevic M, Aleksic M, **Golic I**, Markelic M, Otasevic V, Jankovic A, Stancic A, Korac B, Korac A. (2017) Fractal and stereological analyses of insulin-induced rat exocrine pancreas remodeling. *Folia Morphologica*. [doi:10.5603/FM.a2017.0106](https://doi.org/10.5603/FM.a2017.0106).
- Petrovic A, Bogojevic D, Korac A, **Golic I**, Jovanovic-Stojanov S, Martinovic V, Ivanovic-Matic S, Stevanovic J, Poznanovic G, Grigorov I. (2017) Oxidative stress-dependent

contribution of HMGB1 to the interplay between apoptosis and autophagy in diabetic rat liver. *J Physiol Biochem*, 11, 2089. doi:10.1007/s13105-017-0574-0.

2016

Cvoro A, Bajic A, Zhang A, Simon M, **Golić I**, Sieglaff DH, Maletic-Savatic M, Korac A, Webb P. (2016) Ligand independent and subtype-selective actions of thyroid hormone receptors in human adipose derived stem cells. *PLoS ONE*, 11(10), e0164407. doi:10.1371/journal.pone.0164407.

Popović S, Subakov Simić G, Korać A, **Golić I**, Komárek J. (2016) *Nephrococcus serbicus*, a new coccoid cyanobacterial species from Božana cave, Serbia. *Phytotaxa*. doi:10.11646/phytotaxa.289.2.3.

Keta O, Bulat T, **Golić I**, Incerti S, Korać A, Petrović I, Ristić-Fira A. (2016) The impact of autophagy on cell death modalities in CRL-5876 lung adenocarcinoma cells after their exposure to γ -rays and/or erlotinib. *Cell Biol Toxicol*, 32, 83-101. doi:10.1007/s10565-016-9319-z.

Stacchiotti A, Favero G, Lavazza A, **Golić I**, Aleksic M, Korac A, Rodella LF, Rezzani R. (2016) Hepatic macrosteatosis is partially converted to microsteatosis by melatonin supplementation in ob/ob mice non-alcoholic fatty liver disease. *PLoS ONE*, 11(1), e0148115. doi:10.1371/journal.pone.0148115.

Golić I, Aleksić M, Lazarević A, Bogdanović M, Jonić S, Korać A. (2016) Methods for studying the localization of mitochondrial complexes III and IV by immunofluorescent and immunogold microscopy. *Arch Biol Sci*, 68(4), 767-772. doi:10.2298/ABS150618061G.

2015

Janković A, **Golić I**, Markelić M, Stančić A, Otašević V, Buzadžić B, Korać A, Korać B. (2015) Two key temporally distinguishable molecular and cellular components of white adipose tissue browning during cold acclimation. *J Physiol - London*, 15, 3267-3280. doi:10.1113/JJP270805.

2014

Otašević V, Šurlan L, Vučetić M, Tulić I, Buzadžić B, Stančić A, Janković A, Veličković K, **Golić I**, Markelić M, Korać A, Korać B. (2014) Expression patterns of mitochondrial OXPHOS components, mitofusin 1 and dynamin-related protein 1 are associated with human embryo fragmentation. *Reprod Fert Develop*. doi:10.1071/RD13415.

Bulatović MZ, Maksimović-Ivanić D, Bensing C, Gomez-Ruiz S, Steinborn D, Schmidt H, Mojić M, Korać A, **Golić I**, Perez-Quintanilla D, Momčilović M, Mijatović S, Kaluđerović GN. (2014) Organotin(IV)-loaded mesoporous silica as a biocompatible strategy in cancer treatment. *Angew Chem Int Ed*, 53, 5982-5987. doi:10.1002/anie.201400763.

Golić I, Veličković K, Markelić M, Stančić A, Janković A, Vučetić M, Otašević V, Buzadžić B, Korać B, Korać A. (2014) Calcium-induced alteration of mitochondrial morphology and mitochondrial-endoplasmic reticulum contacts in rat brown adipocytes. *Eur J Histochem*, 58, 251-257. doi:10.4081/ejh.2014.2377.

Janković A, Korać A, Srdić-Galić B, Buzadžić B, Otašević V, Stančić A, Vučetić M, Markelić M, Veličković K, **Golić I**, Korać B. (2014) Differences in the redox status of human visceral and subcutaneous adipose tissue - relationship to obesity and metabolic risk. *Metabolism*, 63, 661-671. doi:10.1016/j.metabol.2014.01.009.

Veličković K, Čvoro A, Srdić B, Stokić E, Markelić M, **Golić I**, Otašević V, Stančić A, Janković A, Vučetić M, Buzadžić B, Korać B, Korać A. (2014) Expression and subcellular

localization of estrogen receptors α and β in human fetal brown adipose tissue. *J Clin Endocrinol Metab*, 99, 151-159. doi:10.1210/jc.2013-2017.

Veličković K, Markelić M, **Golić I**, Otašević V, Stančić A, Janković A, Vučetić M, Buzadžić B, Korać B, Korać A. (2014) Long-term dietary L-arginine supplementation increases endothelial nitric oxide synthase and vasoactive intestinal peptide immunoeexpression in rat small intestine. *Eur J Nutr*, 53, 813-821. doi:10.1007/s00394-013-0585-8.

2013

Markelić M, Veličković K, **Golić I**, Klepal W, Otašević V, Stančić A, Janković A, Vučetić M, Buzadžić B, Korać B, Korać A. (2013) The origin of lipofuscin in brown adipocytes of hyperinsulinaemic rats: the role of lipid peroxidation and iron. *Histol Histopathol*, 28, 493-503. doi:10.14670/HH-28.493.

Staničić A, Buzadžić B, Korać A, Otašević V, Janković A, Vučetić M, Markelić M, Veličković K, **Golić I**, Korać B. (2013) Regulatory role of PGC-1 α /PPAR signaling in skeletal muscle metabolic recruitment during cold acclimation. *J Exp Biol*, 216, 4233-4241. doi:10.1242/jeb.089334.

Janković A, Korać A, Buzadžić B, Otašević V, Stančić A, Vučetić M, Markelić M, Veličković K, **Golić I**, Korać B. (2013) Endocrine and metabolic signaling in retroperitoneal white adipose tissue remodeling during cold acclimation. *J Obes*, 937572. doi:10.1155/2013/937572.

Vučetić M, Stančić A, Otašević V, Janković A, Korać A, Markelić M, Veličković K, **Golić I**, Buzadžić B, Storrey K, Korać B. (2013) The impact of cold acclimation and hibernation on antioxidant defenses in the ground squirrel (*Spermophilus citellus*): An update. *Free Radical Bio Med*, 65, 916-924. doi:10.1016/j.freeradbiomed.2013.08.188.

Staničić A, Otašević V, Janković A, Vučetić M, Ivanović-Burmazović I, Filipović M, Korać A, Markelić M, Veličković K, **Golić I**, Buzadžić B, Korać B. (2013) Molecular basis of hippocampal energy metabolism in diabetic rats: The effects of SOD mimic. *Brain Res Bull*, 99, 27-33. doi:10.1016/j.brainresbull.2013.09.009.

2012

Otašević V, Korać A, Vučetić M, Macanović B, Garalejić E, Ivanović-Burmazović I, Filipović M, Buzadžić B, Stančić A, Janković A, Veličković K, **Golić I**, Markelić M, Korać B. (2012) Is manganese (II) pentaazamacrocyclic superoxide dismutase mimic beneficial for human sperm mitochondria function and motility? *Antioxid Redox Sign*, 18, 170-178. doi:10.1089/ars.2012.4684.

Jović M, Stančić A, Nenadić D, Čekić O, Nežić D, Milojević P, Mićović S, Buzadžić B, Korać A, Otašević V, Janković A, Vučetić M, Veličković K, **Golić I**, Korać B. (2012) Mitochondrial molecular basis of sevoflurane and propofol cardioprotection in patients undergoing aortic valve replacement with cardiopulmonary bypass. *Cell Physiol Biochem*, 29, 131-142. doi:10.1159/000337594.

Vučetić M, Otašević V, Stančić A, Janković A, Markelić M, **Golić I**, Veličković K, Buzadžić B, Korać A, Korać B. (2012) Protein expression of ubiquitin in interscapular brown adipose tissue during acclimation of rats to cold: the impact of NO. *Mol Cell Biochem*, 368, 189-193. doi:10.1007/s11010-012-1359-y.

Ukropina M, Glišić R, Veličković K, Markelić M, **Golić I**, Čakić-Milošević M, Koko V. (2012) Effects of methimazole-induced hypothyroidism on immunohistochemical,

stereomorphometric and some ultrastructural characteristics of pancreatic β -cells. *Arch Biol Sci*, 64, 943-951. doi:10.2298/ABS1203943U.

2011 Markelić M, Veličković K, **Golić I**, Otašević V, Stančić A, Janković A, Vučetić M, Buzadžić B, Korać B, Korać A. (2011) Endothelial cell apoptosis in brown adipose tissue of rats induced by hyperinsulinaemia: the possible role of TNF- α . *Eur J Histochem*, 55, e34. doi:10.4081/ejh.2011.e34.

Vučetić M, Otašević V, Korać A, Stančić A, Janković A, Markelić M, **Golić I**, Veličković K, Buzadžić B, Korać B. (2011) Interscapular brown adipose tissue metabolic reprogramming during cold acclimation: Interplay of HIF-1 and AMPK α . *BBA-Gen Subjects*, 1810, 1252-1261. doi:10.1016/j.bbagen.2011.09.007.

Markelić M, Veličković K, **Golić I**, Ukropina M, Čakić-Milošević M, Koko V, Korać A. (2011) Calcium-Sandoz-induced erythrocyte exovesiculation and internalization of hemichromic material into rat brown adipocytes. *Arch Biol Sci*, 63, 309-317. doi:10.2298/ABS1102309M.

2010 Jasnić N, Korać A, Veličković K, **Golić I**, Đorđević J, Đurašević S, Đorđević I, Vujović P, Cvijić G. (2010) The effect of acute heat exposure on rat pituitary corticotroph activation: the role of vasopressin. *Folia Histochem Cytobiol*, 48, 507-512. doi:10.2478/v10042-010-0071-6.

BOOK CHAPTERS

2017 Stacchiotti A, Bonomini F, Lavazza A, **Golic I**, Korac A, Monsalve M, Favero G, Rezzani R. (2017) Leptin-deficient obese mice: a multi-organ stress model rescued by melatonin. In: *Microscopy and imaging science: practical approaches to applied research and education*. Ed. A. Méndez-Vilas, Formatex Research Center. ISBN-13: 978-84-942134-9-6, pp. 208-215.

CONFERENCE PAPERS

2017 Markelic M, Jankovic A, **Golic I**, Aleksic M, Stancic A, Otasevic V, Masovic S, Marin M, Korac B, Korac A. Visceral vs subcutaneous white adipose depots response to insulin treatments in rats. *European Congress of Endocrinology*, Lisbon, Portugal, May 20-23, 2017. doi:10.1530/endoabs.49.EP693.

Marin M, **Golic I**, Markelic M, Stancic A, Otasevic V, Jankovic A, Korac B, Korac A. Catalase localization in Duchenne-Becker patients' erythrocytes. *OCC World Congress and Annual SFRR-E Conference 2017 Metabolic Stress and Redox Regulation*, Berlin, Germany, June 21-23, 2017. doi:10.1016/j.freeradbiomed.2017.04.326.

2015 Stacchiotti A, Favero G, Lavazza A, Aleksic M, **Golic I**, Korac A, Rezzani R. Melatonin limits er stress in the obese mice liver through Sirtuin 1. *Microscopy Conference - MC2015*, Göttingen, Germany, September 6-9, 2015.

Golic I, Markelic M, Velickovic K, Otasevic V, Stancic A, Jankovic A, Korac B, Korac A. Insulin modulates thermogenic and bioenergetic capacity of rat brown adipocytes. *12th Multinational Congress on Microscopy - MCM2015*, Eger, Hungary, August 23-28, 2015.

Aleksic M, Pajevic M, **Golic I**, Otasevic V, Stancic A, Jankovic A, Korac B, Korac A. The remodeling of rat Langerhans islets in induced hyperinsulinemia. *12th Multinational Congress on Microscopy - MCM2015*, Eger, Hungary, August 23-28, 2015.

- 2014 Vucetic M, Otasevic V, Stancic A, Jankovic A, Stamatovic S, Korac A, Markelic M, Velickovic K, **Golic I**, Buzadzic B, Korac B. Energy challenges and oxygen (un)availability - key players in pre-hibernation's molecular changes essential for euthermia abandonment in *Spermophilus citellus*. *5th European Ground Squirrel Meeting - Perspectives on endangered species*, Rust, Austria, October 02-05, 2014.
- Buzadzic B, Panic A, Jankovic A, Otasevic V, Stancic A, Vucetic M, Korac A, Markelic M, Velickovic K, **Golic I**, Korac B. Molecular characteristics of oxidative and antioxidant capacity of *Spermophilus citellus* kidney in hibernation - initiation of a resistant phenotype well before hibernation induction. *5th European Ground Squirrel Meeting - Perspectives on endangered species*, Rust, Austria, October 02-05, 2014.
- Golić I**, Markelić M, Veličković K, Janković A, Stančić A, Vučetić M, Otašević V, Buzadžić B, Korać B, Jonić S, Korać A. Insulin induces cristae remodeling by decreasing complex I and increasing UCP1 expression in rat brown adipose tissue. *18th European Bioenergetics Conference – EBEC2014*, Lisbon, Portugal, July 12-17, 2014. doi:10.1016/j.bbabbio.2014.05.295.
- 2013 Markelić M, Veličković K, **Golić I**, Janković A, Vučetić M, Stančić A, Otašević V, Korać B, Buzadžić B, Korać A. Hyperinsulinaemia-induced structural remodeling of visceral and subcutaneous white adipose depots in rats. *Microscopy Conference - MC2013*, Regensburg, Germany, August 25-30, 2013.
- Veličković K, Korać A, Markelić M, **Golić I**, Korać B, Otašević V, Vučetić M, Stančić A, Janković A, Buzadžić B. Cold-induced brown adipose tissue hyperplasia: role of bone morphogenic proteins. *Microscopy Conference - MC2013*, Regensburg, Germany, August 25-30, 2013.
- Otašević V, Korać A, Vučetić M, Macanović B, Garalejić E, Ivanović-Burmazović I, Filipović M, Buzadžić B, Stančić A, Janković A, Veličković K, **Golić I**, Markelić M, Korać B. Beneficial effects of manganese (II) pentaazamacrocyclic superoxide dismutase mimic M40403 on human sperm functionality. *Medicinal Redox Inorganic Chemistry Conference 2013: Redox Modulation of Health and Disease: From Inorganic Chemistry to Translational Medicine*, Erlangen, Germany, July 20-22, 2013.
- Šurlan L, Otašević V, Veličković K, **Golić I**, Vučetić M, Stanković V, Stojnić J, Radunović N, Tulić I, Korać B, Korać A. Exosomes as bioactive messengers in a critical time for preimplantation embryos – an ultrastructural study. *29th Annual Meeting of the European Society of Human Reproduction and Embryology (ESHRE)*, London, UK, July 07-10, 2013.
- 2012 Markelić M, Veličković K, **Golić I**, Vučetić M, Stančić A, Janković A, Otašević V, Korać B, Buzadžić B, Korać A. Adipo-angiogenic clusters govern insulin-induced brown adipose tissue enlargement. *54rd Symposium of the Society for Histochemistry*, Vienna, Austria, September 5-8, 2012.
- Veličković K, Srdić B, Markelić M, **Golić I**, Otašević V, Stančić A, Janković A, Vučetić M, Buzadžić B, Korać B, Korać A. Estrogen receptors involvement in human fetal brown adipose tissue differentiation. *54rd Symposium of the Society for Histochemistry*, Vienna, Austria, September 5-8, 2012.
- Macanović B, Otašević V, Korać A, Vučetić M, Garalejić E, Ivanović-Burmazović I, Filipović M, Buzadžić B, Stančić A, Janković A, Veličković K, **Golić I**, Markelić M, Korać B.

Manganese (II) pentaazamacrocyclic SOD mimic improves functional status of human sperm mitochondria: involvement of iNO. *28th Annual Meeting of the European Society of Human Reproduction and Embryology (ESHRE)*, Istanbul, Turkey, July 01-04, 2012.

Vučetić M, Stančić A, Filipović M, Ivanović-Burmazović I, Otašević V, Korać A, Janković A, Buzadžić B, Veličković K, Markelić M, **Golić I**, Korać B. The effects of superoxide dismutase mimic on energy metabolism in hippocampus of diabetic rats. *46th Annual Scientific Meeting of the European Society for Clinical Investigation*, Budapest, Hungary, March 22-24, 2012.

2011

Markelic M, Velickovic K, **Golic I**, Otasevic V, Stancic A, Jankovic A, Vucetic M, Korac B, Buzadzic B, Korac A. Insulin-induced microcirculation remodeling in the rat brown adipose tissue. *Joint Meeting of the European Society for Microcirculation (ESM) and the German Society of Microcirculation and Vascular Biology (GfMVB)*, Munich, Germany, October 13-16, 2011.

Veličković K, Srdić B, Markelić M, **Golić I**, Otašević V, Stančić A, Janković A, Buzadžić B, Korać B, Korać A. Estrogen receptors in human fetal adipose tissue. *Nuclear receptors: From Molecular Mechanism to Health and Disease - EMBO Conference Series*, Sitges, Barcelona, Spain, September 16-20, 2011.

Golić I, Veličković K, Markelić M, Vučetić M, Janković A, Buzadžić B, Stančić A, Otašević V, Korać B, Korać A. Calcium-induced mitochondrial fusion in rat brown adipocytes. *Mitochondrial Dynamics: from Mechanism to Disease*, Sardinia, Italy, September 11-15, 2011.

Abdussalam Ali A Hmaid A, Stančić A, Markelić M, Veličković K, **Golić I**, Otašević V, Vučetić M, Janković A, Buzadžić B, Korać B, Korać A. Mitochondriogenesis in heart of cold-acclimated rats: the role of nitric oxide. *10th Multinational Congress on Microscopy 2011*, Urbino, Italy, September 4-9, 2011.

Preković S, Veličković K, **Golić I**, Stančić A, Otašević V, Vučetić M, Janković M, Markelić M. Hsp70 and hsp90 immuno-expression in brown adipose tissue of hyperinsulinaemic rats. *10th Multinational Congress on Microscopy 2011*, Urbino, Italy, September 4-9, 2011.

Stančić A, Buzadžić B, Korać A, Otašević V, Janković A, Vučetić M, Markelić M, **Golić I**, Veličković K, Korać B. Role of glutathione in mitochondrial structural remodeling in interscapular brown adipose tissue during cold acclimation. *MiP2011 - 8th Conference on Mitochondrial Physiology*, Bordeaux, France, September 5-8, 2011.

Buzadzic B, Korac A, Otasevic V, Stancic A, Jankovic A, Vucetic M, Markelic M, **Golic I**, Velickovic K, Korac B. Mitochondria, free radicals and uncoupling in skin physiology and pathology. *5th International conference on Oxidative Stress in Skin Biology and Medicine*, Andros, Greece, September 1-4, 2011.

Vučetić M, Buzadžić B, Korać A, Macanović B, Ivanović-Burmazović I, Filipović M, Stančić A, Janković A, Markelić M, **Golić I**, Veličković K, Otašević V, Korać B. Influence of superoxide dismutase mimic on sperm mitochondrial physiology. *The 8th European Meeting on Mitochondrial Pathology*, Zaragoza, Spain, June 20-23, 2011.

Šurlan L, **Golić I**, Otašević V, Veličković K, Stanković V, Mičić JD, Tulić I, Grubić M, Korać B, Korać A. Mitoptosis can contribute to the blastomeres fragmentation. *The 4th International IVI Congress*, Valencia, Spain, April 7-9, 2011.

2010 Markelić M, Veličković K, **Golić I**, Korać A. The mitochondrial origin of lipofuscin in brown adipocytes of hyperinsulinaemic rats: The role of lipid peroxidation and iron. *International symposium One hundred years of Ivan Djaja's (Jean Gaja) Belgrade School of Physiology*, Belgrade, Serbia, September 10-14, 2010.

Šurlan L, **Golić I**, Tulić I, Otašević V, Korać B, Korać A. Mitochondrial distribution and nitric oxide production in partially fragmented human embryo. *52nd Symposium of the Society for Histochemistry; Advanced imaging techniques in biomedicine: from molecules to organisms*, Prague, Czech Republic, September 1-4, 2010.

Advising

MSc STUDENTS, AS COMMITTEE MEMBER

2017 Jelena Janković
2016 Žana Gajić
2015 Marina Ljubanović
2015 Jovana Nikolić
2014 Tijana Lukić
2014 Nikola Smatlik (PhD Student, University of Tübingen, Germany)
2014 Marija Aleksić (PhD Student, University of Belgrade, Serbia)
2014 Ahsein Addloli (PhD Student, University of Belgrade, Serbia)

UNDERGRADUATE HONORS STUDENTS

2017 Radmila Panić (as Committee Member)