Aleksandra Trifunovic

Personal Data

Title	Prof. Dr.
First name	Aleksandra
Name	Trifunovic
Current position	Full Professor, permanent
Current institution(s site(s), country	Institute for Mitochondrial Disease and Ageing / CECAD Faculty of Medicine, University of Cologne, Germany
Identifiers/ORCID	0000-0002-5472-3517

Qualifications and Career

Stages	Periods and Details
Doctorate	Molecular Biology and Biochemisty, 1998–2000, Prof. Stanka Romac, Institute of Molecular Genetics and Genetic Engineering (IMGGE), University of Belgrade, Serbia
Magister of Science	Molecular Biology and Biochemistry, 1994–1998, University of Belgrade, Serbia
Diploma in Science	Biology, 1989–1994, University of Belgrade, Serbia

Stages of Academic/Professional Career

Full Professor (W3)	2014–present, University of Cologne, Germany
Visiting Professor	2013–2015, University of Belgrade, Serbia
Lecturer (Privatdozent)	2010–present, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany
Research Group Leader Tenure Track	2009–2014, CECAD, University of Cologne, Germany
Senior Scientist	2009–2012, Karolinska Institute, Stockholm, Sweden
Assistant Professor	2006–2009, Karolinska Institute, Stockholm, Sweden
Postdoctoral Fellow	2000–2005, Prof. Dr. Nils-Göran Larsson, Karolinska Institute, Stockholm, Sweden

Activities in the Research System

Institutional Responsibilities (selected)

2024–present	Spokesperson, Diversity Committee, CRC 1607 (DFG) “Towards immunomodulatory and anti(lymph)angiogenic therapies for age-related blinding eye diseases”; University of Cologne, Germany
2019–present	Coordinator, Research Area 1 “Cell Autonomous Control of Homeostatic Mechanisms and Cellular Stress Responses in Aging and Aging-associated Diseases”, Cologne Excellence Cluster EXC 2030 (DFG) “Cellular Stress Responses in Aging-associated Diseases” (CECAD), Cologne, Germany
2019–present	Executive Board Member, Cologne Excellence Cluster EXC 2030 (DFG) “Cellular Stress Responses in Aging-associated Diseases” (CECAD), Cologne, Germany

2017–2019	Managing Director, CECAD Research Center, University of Cologne, Germany
2016–present	Vice Spokesperson, CRC 1218 (DFG) “Mitochondrial regulation of cellular function” University of Cologne, Germany
2010–2012	Executive Board Member, Cologne Excellence Cluster EXC 229 (DFG) “Cellular Stress Responses in Ageing-Associated Diseases” (CECAD), Cologne, Germany

Service to the Scientific Community (selected)

2024–present	Section Editor, PLoS Genetics
2023	Co-Organizer, Cologne Spring Meeting “Cell death and mitochondrial signaling in health and disease”, Cologne, Germany
2022	Organizer, FEBS/EMBO Advanced Course “Mitochondria in life, death and disease”, Budva, Montenegro
2021	Coordinator, Initial Training Network REMIX (EU) “Regulation of mitochondrial gene expression”
2021	Organizer, Young Mito Investigator Forum, virtual
2019	Organizer, FEBS/EMBO Advanced Course: Mitochondria in life, death and disease, Herceg Novi, Montenegro
2018	Co-Organizer, CRC 1218 Symphosium “Mitochondrial plasticity in metabolism and signaling”, Cologne, Germany
2017–2023	Associate Editor, PLoS Genetics
2017	Co-Organizer, 10th European Meeting on Mitochondrial Pathophysiology (EuroMit 10), Cologne, Germany
2016–present	Associate Editor, Cell Signaling
2013	Co-Organizer, First Cologne Aging Meeting, Cologne, Germany
2011–present	Associate Editor, Frontiers in Genetics of Aging
2010	Co-Organizer, 61st Mosbacher Kolloquium “The Biology of Ageing: Mechanisms and Intervention”, Mosbach, Germany
2007	Co-Organizer, Key Symposium: “Biology of Ageing”; Saltsjöbaden, Stockholm, Sweden

Scientific Results

Category A

Moschandrea, C., Kondylis, V., Evangelakos, I., Herholz, M., Schneider, F., Schmidt, C., Yang, M., Ehret, S., Heine, M., Jaeckstein, M.Y., Szczepanowska, K., Schwarzer, R., Baumann, L., Bock, T., Nikitopoulou, E., Brodesser, S., Krüger, M., Frezza, C., Heeren, J., **Trifunovic, A.**#, and Pasparakis, M.# (2024). Mitochondrial dysfunction abrogates dietary lipid processing in enterocytes. **Nature** *625*:385–392. doi: 10.1038/s41586-023-06857-0. (open access)

Croon, M.#, Szczepanowska, K., Popovic, M., Lienkamp, C., Senft, K., Brandscheid, C.P., Bock, T., Gnatzy-Feik, L., Ashurov, A., Acton, R.A., Kaul, H., Pujol, C., Rosenkranz, S., Krüger, M., and **Trifunovic, A.**# (2022). FGF21 modulates mitochondrial stress response in cardiomyocytes only under mild mitochondrial dysfunction. **Sci Adv** *8*:eabn7105. doi: 10.1126/sciadv.abn7105. (open access)

Rumyantseva, A., Popovic, M., and **Trifunovic, A.** (2022). CLPP deficiency ameliorates neurodegeneration caused by impaired mitochondrial protein synthesis. **Brain** *29*:92–104. doi: 10.1093/brain/awab303. (open access)

Kaspar, S., Oertlin, C., Szczepanowska, K., Kukat, A., Senft, K., Lucas, C., Brodesser, S., Hatzoglou, M., Larsson, O., Topisirovic, I., and **Trifunovic, A.** (2021). Adaptation to mitochondrial stress requires CHOP-directed tuning of ISR. **Sci Adv** *26*:eabf0971. doi: 10.1126/sciadv.abf0971. (open access)

Szczepanowska, K.#, Senft, K., Heidler, J., Herholz, M., Kukat, A., Höhne, M.N., Hofsetz, E., Becker, C., Kaspar, S., Giese, H., Zwicker, K., Guerrero-Castillo, S., Baumann, L., Kauppila, J., Rumyantseva, A., Müller, S., Frese, C.K., Brandt, U., Riemer, J., Wittig, I., and **Trifunovic, A.**# (2020). A salvage pathway maintains functional respiratory complex I. **Nat Commun** *11*:1643–1661. doi: 10.1038/s41467-020-15467-7. (open access)

Herholz, M., Cepeda, E., Baumann, L., Kukat, A., Hermeling, J., Maciej, S., Szczepanowska, K., Pavlenko, V., Frommolt, P., and **Trifunovic, A.** (2019). KLF-1 orchestrates a xenobiotic detoxification program essential for longevity of mitochondrial mutants. **Nat Commun** *10*:3323–3338. doi: 10.1038/s41467-019-11275-w. (open access)

Szczepanowska, K.*, Maiti, P.*, Kukat, A., Hofetz, E., Nolte, H., Senft, K., Becker, C., Ruzzenente, B., Hornig-Do, H.T., Wibom, R., Wiesner, R.J., Krüger, M., and **Trifunovic, A.** (2016). CLPP coordinates mitoribosomal assembly through the regulation of ERAL1 levels. **EMBO J** *35*:2566–2583. doi: 10.15252/embj.201694253. (open access)

Dogan, S.A.*, Pujol, C.*, Maiti, P., Kukat, A., Wang, S., Hermans, S., Senft, K., Wibom, R., Rugarli, E.I., and **Trifunovic, A.** (2014). Tissue-specific loss of DARS2 activates stress responses independently of respiratory chain deficiency in the heart. **Cell Metab** *19*:458–469. doi: 10.1016/j.cmet.2014.02.004. (open access)

Edgar, D., Shabalina, I., Camara, Y., Wredenberg, A., Calvaruso, M.A., Nijtmans, L., Nedergaard, J., Cannon, B., Larsson, N.G., and **Trifunovic, A.** (2009). Random point mutations with major effects on protein coding genes drive premature ageing in mtDNA mutator mice. **Cell Metab** *10*:131–138. doi: 10.1016/j.cmet.2009.06.010.(open access)

Trifunovic, A., Wredenberg, A., Falkenberg, M., Spelbrink, J.N., Rovio, A.T., Bruder, C.E., Bohlooly-Y, M., Gidlof, S., Oldfors, A., Wibom, R., Tornell, J., Jacobs, H.T., and Larsson, N.G. (2004). Premature ageing in mice expressing defective mitochondrial DNA polymerase. **Nature** *429*:417–423. doi: 10.1038/nature02517. (open access)

** shared first authorship, # shared corresponding authorship*

Category B

Preprints, Reviews, and Commentaries (Non-peer-reviewed, selected)

Hermeling, J., Pavlenko, V., Herholz, M., Baumaann, L., Zecic, A., Kukat, A., Popovic, M., Szczepanowska, K., Cepeda Cores, E., Vilchez, D., Kurian, L., and **Trifunovic, A.**# (2023). SPTF-3/SP1 orchestrates mitochondrial biogenesis upon ribosomal stress and acute starvation. **bioRxiv**. doi: 10.1101/2023.08.18.553493.

Academic Distinctions

2024	Elected Member, European Molecular Biology Organization (EMBO)
2018	ERC Proof of Concept Grant
2013	ERC Starting Grant