



Guest Editorial

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This special issue of *Neurochemical Research* contains manuscripts from a large number of investigators throughout the world to honor Vera Adam-Vizi for her contributions to the understanding of mitochondrial mechanisms of neurodegeneration.

Professor Adam-Vizi was born in Nagykanizsa, a town in southwestern Hungary. She received an MD degree from the Semmelweis University and then went for a postdoc at the Department of Biochemistry, Institute of Psychiatry in London during which she had the privilege of working with Dr. Roger Marchbanks on isolated nerve terminals (synaptosomes).

Subsequently, she became a Wellcome Trust fellow at the Department of Physiology, King's College London; it was there where she received the most important influence regarding her way of thinking and attitude towards science by Professor Peter Baker, a former student of Hodgkin and one of the most eminent physiologists at that time. They were in the middle of exciting experiments using the NO-donor nitroprusside on guanylate cyclase in squid axons (and this was before the discovery of NO) in the famous laboratory of Hodgkin and Huxley in Plymouth, when Peter died at the tragically young age of 47. Their work was never finished but a paper was published after Peter's death on the results collected by that date (BBA 1988, 938:461). It was also at King's College where she met Professor Joan Abbott, with whom she worked on nucleotide receptors in primary rat brain endothelial cells optimizing methods for growing these

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cell in culture; through this common interest many exchange visits from the two labs took place.

After King's College, she moved to the other side of the pond to hold a position at the Center for Neurochemistry, New York University in New York. There, she worked with Prof. Abel Lajtha, a world-known neurochemist who is also founding Editor-in-Chief of *Neurochemical Research*.

Subsequently, she returned to the Semmelweis University in Budapest and quickly went up the ranks first becoming an assistant professor and then associate professor, eventually assuming responsibilities as Head of the Biochemistry Department. From then on, her interests gradually shifted from neurotransmitter release – a fruitful field of research in which she published several seminal papers (*J Physiol* 1984, 353:505; *J Physiol* 1986, 372:363; *J Neurochem* 1987, 49:1013; *J Neurochem* 1992, 58:395)—to oxidative stress in relation with in situ mitochondrial functions in nervous tissues. In this respect, she produced several highly-cited papers characterizing the targets of oxidative stress in nerve terminals (*J Neurochem* 1996, 66:2057; *J Neurosci* 2000, 20:2094) highlighting mechanisms of ROS generation (*J Neurochem* 2003, 84:112) especially those emanating from the enzymes alpha-ketoglutarate dehydrogenase (*J Neurosci* 2004, 24:7771) and alpha-glycerophosphate dehydrogenase (*J Neurochem* 2007, 100:650). Recently, her focus gained more depth in terms of ROS generation by disease-causing mutations of alpha-ketoglutarate dehydrogenase, some of which mimic diseases observed in Ashkenazi Jews (*Human Mol Genetics* 2011, 20:2984; *Neurochem Int*, 2018, 117:5).

Apart from a brilliant scientific career and having also served in the editorial boards of the *Journal of Neurochemistry*, *Neurochemistry International*, *Brain Research Bulletin*

and *International Journal of Developmental Neuroscience*, prof. Adam-Vizi has held high-ranking positions in the administrative hierarchy of the Semmelweis University: she was the vice rector responsible for scientific affairs and foreign relations for a total of 9 years; Currently, she is the deputy president of the Medical Department of the Hungarian Academy of Sciences.

Furthermore, she is the president of the Hungarian panel of a L'Oréal program for supporting women in science, a program known to award great prizes to worthy women each year; through her position she is paying special attention to women candidates or applicants and promote women in science as they so deserve.

Prof. Adam-Vizi has received numerous awards, but those who deserve special merit are the (i) the Szechenyi award (named after Count Szechenyi, the founder of the Hungarian Academy of Sciences in 1825), and (ii) an honorary citizenship award from her hometown.

For all of these reasons and more, this Special Issue dedicated to her is very timely and so well deserved!

On behalf of all contributors from around the world, we wish to praise Prof. Adam-Vizi for her outstanding scientific achievements and wish her to continue on with her dedication in science and neurochemistry for many more years to come.

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