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TO WHOM IT MAY CONCERN:

Markéta Marvanová, Ph.D., has asked me to write a letter of recommendation on her behalf, and it is a pleasure for me to do so. I first met Markéta when she joined my lab at the A.I. Virtanen Institute, University of Kuopio, in January, 2000, as a graduate student. Before joining my lab, she had completed her Masters degree on Pharmacy at the Charles University in Prague, Czech republic. The pro gradu work for her masters degree she had completed at the Department of Pharmacology and Toxicology, University of Kuopio, under supervision of Prof. Pekka Männistö.

In my laboratory, Markéta was working on the effects of memantine, an NMDA receptor antagonist, on gene expression in rodent brain. I have been a co-supervisor of her PhD studies, together with Dr. Garry Wong, who was working as a senior scientist in my lab. When Dr. Wong was promoted to a status of a group leader and my laboratory moved to the University of Helsinki, Markéta joined the lab of Dr. Wong and completed her PhD there in December 2003. However, I had a privilege to follow her development closely. As her first study, Markéta studied the effects of Memantine on the expression of neurotrophins and their receptors and found an unexpectedly widespread increase in mRNA levels of BDNF and trkB. Since BDNF is under keen interest as a potential endogenous neuroprotective molecule, these findings raised the possibility that at least part of the neuroprotective effects of Memantine are mediated by the increase of BDNF expression, as discovered by Markéta. This paper was published in Mol. Cell. Neurosci. and has raised quite a bit of interest among people working on neuroprotective drugs. Markéta continued from this by doing a systematic analysis of gene expression changes in brain in response to memantine using DNA microarrays, and findings from this work resulted in two additional publications, in Neuropharmacology and Molecular Brain Research.

In addition to the work with memantine, the seemingly endless enthusiasm of Markéta has yielded at least two other very interesting studies. The first one involved random screening of several hundred expressed sequence tags corresponding to unknown genes using in situ hybridization in developing and adult rat brain. This work, which was published in Molecular Brain Research, produced at he first synexpression map of gene expression patterns in brain and a data bank that has a potential to become a founding member in a very important study tool in the future, as the expression patterns of more and more genes from genome projects become available. The other project, gene expression pattern in the brain of non-human primates, was not only a landmark study, but characteristically describes the ability of Markéta to take the best out of the possibilities offered to her. In 2000, Markéta was awarded the Aventis Prize for Pharmacy, which included a grant to spend a short period in a French laboratory. Markéta selected a Laboratory of Functional Genomics at Aventis Pharma, where she spent a couple of weeks in the summer of 2001. While there, she amazed everyone by her enthusiasm and drive to get results during a short time, and she managed to nearly complete a comparative study of gene expression between human and nonhuman primate brain. This work was further elaborated in collaboration with her host and produced a remarkable paper, published in FASEB Journal.

While in Dr. Wong's lab, Markéta familiarized herself with C. Elegans models used in that group. After completion of her PhD studies in December 2003, she moved to the US to Vanderbilt University to puruse the use of C. Elegans in neuropharmacological research. I met Markéta a week ago at her poster at the Society for Neuroscience meeting and, even though I know the energy and drive of Markéta, I nevertheless was very impressed on the amount of high quality work that she had been able to complete in less than a year.

Markéta Marvanová is a very smart and ambitious young scientist. She is amazingly fast at learning both the scientific content and research techniques which are required for her project. She is persistent and intellectually flexible, and is excellent at finding optimal solutions to research problems that she faces. In addition, she gets very well along with other members of the laboratory, helps them and instructs at methods that she is familiar with.

For these reasons, I recommend Markéta Marvanová enthusiastically and without any reservations whatsoever, for faculty positions in biology, molecular and cellular biology and neurobiology.

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