

# ANDREA SZABÓ-VERECZKEI



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## RESEARCH AREA

The main topic of my research interest is the genetic analysis of various psychiatric diseases and their possible predisposing genetic factors. My research career began with the investigation of genetic risk factors for heroin addiction at the Institute of Medical Chemistry, Molecular Biology and Pathobiochemistry at Semmelweis University (currently Department of Molecular Biology). During my work, I mainly investigated the genetic risk factors of the dopaminergic and serotonergic systems in the background of the development of heroin addiction and the success of replacement therapies. Over the years, I have participated in the genetic research of depression, obsessive-compulsive disorder (OCD), attention deficit hyperactivity disorder (ADHD) and Tourette's syndrome as part of collaborations. In recent years, I have primarily been involved in examining the genetic risk factors of potentially addictive substances (alcohol, tobacco, cannabis and other drugs) and behaviors (internet use, online gaming, social media use, gambling, exercise, hair pulling, eating).

## TECHNIQUES AVAILABLE IN THE LAB

My applied techniques include DNA and RNA isolation procedures, as well as various genotyping methods, such as polymerase chain reaction (PCR), real-time PCR, OpenArray genotyping, electrophoresis techniques (conventional, polyacrylamide, capillary). I also use cloning and gene expression systems, so knowledge of cell cultures is essential. During a US scholarship, I also had the opportunity to participate in human gene expression research, where we used microarray method to investigate predisposing factors for depression in a fibroblast cell system.

## SELECTED PUBLICATIONS

Garbett, K. A., **Vereczkei, A.**, Kalman, S., Brown, J. A., Taylor, W. D., Faludi, G., et al. (2015). Coordinated Messenger RNA/MicroRNA Changes in Fibroblasts of Patients with Major Depression. *Biol Psychiatry* **77**(3): 256-265.

Garbett, K. A., **Vereczkei, A.**, Kaman, S., Wang, L., Korade, Z., Shelton, R. C., et al. (2015). Fibroblasts from patients with major depressive disorder show distinct transcriptional response to metabolic stressors. *Transl Psychiatry*, **5**(3): e523.

**Vereczkei, A.**, Abdul-Rahman, O., Halmai, Z., Nagy, G., Szekely, A., Somogyi, A., et al. (2019). Association of purinergic receptor P2RX7 gene polymorphisms with depression symptoms. *Prog Neuropsychopharmacol Biol Psychiatry* **92**: 207-216.

Kotyuk, E., Magi, A., Eisinger, A., Kiraly, O., **Vereczkei, A.**, Barta, C., et al. (2020). Co-occurrences of substance use and other potentially addictive behaviors: Epidemiological results from the Psychological and Genetic Factors of the Addictive Behaviors (PGA) Study. *J Behav Addic* **9**(2): 272-288.

**Vereczkei, A.**, Barta, C., Magi, A., Farkas, J., Eisinger, A., Kiraly, O., et al. (2022). FOXN3 and GDNF Polymorphisms as Common Genetic Factors of Substance Use and Addictive Behaviors. *J Pers Med* **12**(5): 690.