

GÁBOR NYIRI



Institute of Experimental Medicine
Cerebral Cortex Research Group

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RESEARCH AREA

My research group focuses on the sub-cortical control of learning and memory processes. We study these questions from synaptic-level electron microscopy studies to viral neuronal tracing methods and behavioral-level studies.

TECHNIQUES AVAILABLE IN THE LAB

My research group uses a variety of neuroscience techniques including, but not limited to: immunohistochemistry, light and electron microscopy, RNAscope, brain surgery to explore and monitor neural pathways, optogenetics, chemogenetics, in vivo electrophysiology, fiber photometry, miniscope calcium imaging and a variety of behavioral techniques.

SELECTED PUBLICATIONS

Szőnyi, A., Sos, K.E., Nyilas, R., Schlingloff, D., Domonkos, A., Takács, V.T. Pósfai, B., Hegedüs, P., Priestley, J.B.J.B., Gundlach, A.L.A.L., Gulyás, A.I.A.I., Varga, V., Losonczy, A., Freund, T.F., **Nyiri, G.** (2019) Brainstem nucleus incertus controls contextual memory formation. **Science** **364**.

Szőnyi, A., Zichó, K., Barth, A.M., Gönczi, R.T.R.T., Schlingloff, D., Török, B., Sipos, E., Major, A., Bardóczi, Z., Sos, K.E.K.E., Gulyás, A.I.A.I., Varga, V., Zelena, D., Freund, T.F., **Nyiri, G.** (2019) A., Median raphe controls acquisition of negative experience in the mouse. **Science** **366**.

Takács, V.T., Cserép, C., Schlingloff, D., Pósfai, B., Szőnyi, A., Sos, K.E.K.E., Környei, Z., Dénes, Á., Gulyás, A.I.A.I., Freund, T.F., Freund, T.F., **Nyiri, G.** (2018) Co-transmission of acetylcholine and GABA regulates hippocampal states. **Nat Commun.** **9**: 2848.

Szabadits, E., Cserép, C., Szonyi, A., Fukazawa, Y., Shigemoto, R., Watanabe, M., Itohara, S., Freund, T.F.T.F., **Nyiri, G.** (2011) NMDA receptors in hippocampal GABAergic synapses and their role in nitric oxide signaling. **J Neurosci** **31**: 5893–5904.

Szabadits, E., Cserép, C., Ludányi, A., Katona, I., Gracia-Llanes, J., Freund, T.F., **Nyiri, G.** (2007) Hippocampal GABAergic synapses possess the molecular machinery for retrograde nitric oxide signaling. **J Neurosci** **27**: 8101–8111.