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New hope from evolutionary approaches to animal models of alcoholism and addiction

Development of novel therapies to combat addiction and alcohol use disorders is not an easy task. Animals in the wild don't self-administer alcohol or other drugs of abuse, which makes modeling addiction processes in them problematic. However, better understanding of biology and evolutionary mechanisms along with achievements of clinical research bring new hope for treatment of the addicted patient. In my presentation I will outline an evolutionary perspective on development of animals models with high predictive validity. I will follow by presenting our recent findings demonstrating how novel animal models can shed light on social aspects of alcohol abuse, which were not possible to model in laboratory animals previously. Specifically, using the socially monogamous prairie vole we are able to model effects of peer pressure and social support on alcohol abuse. Our more recent studies test whether alcohol's effects on pair bonding and effects of family structure on alcohol abuse have biological underpinnings. Increased capabilities of animal research are of high value for development rational pharmacotherapy of alcohol use disorders and addiction.

Biography

Dr. Andrey Ryabinin has received his Ph.D. from the Institute of Normal Physiology in Moscow, Russia, performed his post-doctoral training at the Scripps Research Institute in La Jolla, California, and is currently a professor at the Oregon Health and Science University in Portland, Oregon. His main areas of research are molecular and systems mechanisms of alcoholism, drug addiction, stress and social behaviors. He has published more than 65 peer-reviewed publications in reputable journals and is on Editorial Boards of Brain Research, Substance Abuse: Research and Treatment, Journal of Addiction Research and Therapy and OMICs-ACR.

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