

Animal models in addiction research

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Recently, various addiction problems have spread in the world, and the situation is growing serious. Addiction is a condition that results when individuals ingest an addictive substance or perform a specific action that can be pleasurable but the continuous use or act of which becomes compulsive and interferes with ordinary life responsibilities. It is very important to clarify the mechanisms underlying addiction, but there are still many unclear points. Animal studies have been crucial in understanding the biology and pathophysiology of drug addiction.

In recent years, although self-administration tests and conditioned place preference tests have been widely used as drug-dependence evaluation methods, intracranial self-stimulation (ICSS) method that electrically stimulate the medial forebrain bundle (lateral hypothalamic region) of the mesolimbic dopamine system could be also useful tools that can provide different insights in drug dependency assessment. In this symposium, we would like to discuss the advantage and disadvantage of ICSS method in drug dependence research and reward-system neural network analysis, in light of previous research and recent trends using the ICSS method.