English abstract

Humans and drugs of abuse have had an intimate relationship in the past thousands of years. The innate individual vulnerability to addiction and the easy access to addictive drugs have become a burden to the addicted and to society. Drug addiction is a chronic, relapsing brain disorder characterized by compulsive drug seeking and use, despite negative consequences. For ethical and practical reasons, addiction research often uses animal models to study the relation between addictive-like behaviors and the underlying mechanisms. In this thesis, I employed several animal models to investigate the possibilities of pharmacological prevention (chapter 2), prediction (chapter 3) and treatment of drug addiction (chapter 4). Even though many treatment methods were developed and used to treat drug addiction, the high relapse rate after treatment is hindering the complete cure of addiction. One of the causes of relapse might be the increased craving to addictive substances after drug withdrawal and abstinence. Therefore, in chapter 5, I investigated the incubation of craving phenomenon in rat and tree shrew CPP models.