

S17-2 Drug abuse and transporters

○Kiyoyuki KITAICHI¹

¹Nagasaki International Univ., Faculty of Pharmaceutical Sciences

There are growing populations including regular citizen and younger person to illegally use psychostimulants in Japan. In many cases, repeated use of psychostimulants causes drug abuse. However, more serious problems are that the further repeated use of psychostimulants worsen abuse itself and psychostimulant-induced schizophrenia including delusion and hallucination (i.e. reverse tolerance). Thus, it is deemed important to develop drugs against drug abuse. In order to respond to this social demand, many studies focusing on neuronal receptors and second messengers have already been performed by regarding “drug abuse” as the changes of neuronal plasticity. However, so far, no drugs are still available.

Recently, many transporters have been cloned and found in brain. Interestingly, these transporters are located at not only BBB and BCSFB but also other areas of brain, suggesting the importance of transporters to vigorously control the survival of neurons and the neuronal plasticity as “selective transport systems for nutrients/drugs/waste products”.

In this symposium, I will introduce the possibilities of transporters as new molecular targets to treat drug abuse, including our data related to psychostimulant- and monoamine-transposable organic cation transporters-3 (OCT3).