Special Issue

Molecular Mechanisms and Treatments of Dependence and Neurotoxicity of Amphetamine-Type Stimulants

Message from the Guest Editor

Amphetamine-type stimulants (ATSs) such as methamphetamine and 3,4-methylenedioxymethamphetamine (MDMA, Ecstasy) are highly addictive drugs with neurotoxic properties. In recent years there has been a pronounced increase in the production and use of ATSs worldwide. Preclinical studies have demonstrated that, in addition to having the potential for abuse, ATS drugs have a potential to elicit neurotoxic effects, particularly at high doses. There are no FDA-approved pharmacotherapies to treat ATS dependence, and there are no appropriate therapeutic strategies to manage the neurological and neuropsychological problems associated with ATS abuse. This Special Issue will review current knowledge on molecular mechanisms underlying the dependence and neurotoxicity of methamphetamine, MDMA, and other ATSs, as well as developing strategies to treat ATS dependence and resultant neurotoxicity. The emphasis will be placed on methamphetamine, as its abuse in the USA has been increasing, together with the deaths from methamphetamine overdose. Consequently, the development of effective pharmacotherapy for methamphetamine dependence and the neurotoxic effects of this drug is a high priority.

Guest Editor

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