of the acquisition and expression of morphine CPP. Moreover, antagonism of OX2Rs could facilitate extinction and may extinguish the ability of drug-related cues, implying that the antagonist might be considered as a propitious therapeutic agent to suppress drug-related behavior.

References

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Synthetic cannabinoid JWH-210 induces motor impairments through the regulation of neurotransmission in tetanus toxin-treated mice

Jaesuk Yun1, Tac-hyung Lee1, Yun Jeong Song1, Seonhwa Seong1, Young-Hoon Kim1, Hye Jin Cha1, Kyoung moon Han1, Jisoon Shin1
1Nagasaki International University, Japan, 2School of Pharmacy, Faculty of Pharmaceutical Science, Ubonratchathani University, Ubonratchathani, Thailand.

Abstract
The problem of new psychoactive substances is emerging globally. Cannabinoid receptors mediate the action of synthetic cannabinoids, which are one of most abused drugs. Recently, cannabinoid receptors 1 (CB1R) have been reported to silence glutamatergic nerve terminals in cerebellar granule cells via synaptic vesicle redistribution. This study aimed to determine whether synthetic cannabinoid administration (0.1mg/kg, 5 days) influences the development of biotoxin-induced deficit in neuronal homeostasis. We observed that JWH-210, a synthetic cannabinoid, induced motor impairment and decrement of vesicle-associated membrane proteins 2 (VAMP2) levels in the cerebellum of mice treated with tetanus toxin. Cerebellar glutamatergic neuronal homeostasis was hampered by JWH-210 administration, as evidenced by increased glutamate concentration levels in the cerebellum of the tetanus-treated mice. However, JWH-250, which has a lower CB1R binding affinity than does JWH-210 (Kᵢ value: 1.1×10⁻⁸ M, and 2.6×10⁻⁴ M, respectively) did not exacerbate motor impairment and VMAP2 decrements in the cerebellum of tetanus-treated mice. In addition, tyrosine hydroxylase, the dopamine synthetic enzyme was downregulated in the striatum of JWH-210/Tetanus mice. These results suggest that JWH-210 may have an additive effect on the tetanus toxin-induced glutamatergic and dopaminergic neuronal dysfunction.

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Possible involvement of cannabinoid CB1 receptors in behavioral impairments after withdrawal from chronic methamphetamine administration in mice.

Ryo Fukumori1, Catherine Ledent1, Satoshi Yamada1, Taku Yamaguchi1, Tsuneyuki Yamamoto2
1Nagasaki International University, Japan, 2Université Libre de Bruxelles, Belgium.

Abstract
Objective: Endocannabinoid systems play important roles in physiological functions in the central nervous system, such as pain perception, appetite, psychomotor behavior, emotion, reward system and cognitive function. We previously reported that the involvement of cannabinoid CB1 receptors in the reinstatement of methamphetamine-seeking behaviors in rats. On the other hand, chronic administration of methamphetamine causes behavioral sensitization in rodents and human. However, the effects of withdrawal from chronic administration of methamphetamine on the cognitive deficits have still unclear. In this study, we investigated relationship between cognitive deficits and development of behavioral sensitization by using the cannabinoid CB1 receptor knockout mice.

Method: Mice were subcutaneously administered methamphetamine at the dose of 1.8 mg/kg or saline, every other day for 30 or 60 days (15 or 30 injections). Behavioral sensitization was evaluated by locomotor activity in the open-field test. 10 or 30 days after withdrawal, the mice were tested a cognitive functions by object recognition test and sensorimotor gating function by prepulse inhibition test.

Result: In wild-type mice, locomotor activity was enhanced by the chronic administration of methamphetamine. Approach time to the novel object was decreased during withdrawal of chronic methamphetamine. In addition, prepulse inhibition of the acoustic startle response was suppressed during withdrawal of chronic methamphetamine. On the other hand, in CB1 receptor knockout mice, the locomotor activity was not enhanced by chronic administration of methamphetamine. Furthermore, CB1 receptor knockout mice were not impaired the cognitive function and prepulse inhibition by chronic administration of methamphetamine.

Conclusion: Our data suggest that activation of the cannabinoid CB1 receptors could lead to the development of behavioral sensitization and cognitive/sensorimotor gating deficits after withdrawal from chronic methamphetamine administration.

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Efficacy and Safety of Aripiprazole for Maintenance Treatment of Methamphetamine Dependence Following Methamphetamine Psychosis: A Naturalistic Retrospective Study

Tuanthon Boonlue1, Somporn Suwanmajo1, Thanarat Suansanae2
1Department of Pharmacy Practice, Faculty of Pharmaceutical Science, Ubonratchathani University, Ubonratchathani, Thailand, 2Department of Pharmacy, Princess Mother National Institute on Drug Abuse Treatment, Prathumthani, Thailand.

Abstract
Objective: The objective was to determine the efficacy and safety of aripiprazole in the maintenance treatment of methamphetamine dependence following methamphetamine psychosis in Thai patients.

Methods: This was a retrospective chart review study in patients aged between 18–65 years with metamphetamine dependence who had been received aripiprazole (dose 2.5–15 mg/day) for at least 2 weeks after resolved from psychosis. Primary outcome was abstinence rate at 12 weeks which was assessed by urine amphetamine concentration. Results: Forty-three patients were enrolled in this study. Most of them (58.1%) received aripiprazole 10–15 mg/day. The abstinence rate at week 2, 4, 6, 8, 10 and 12 were 90.70%, 88.10%, 78.13%, 76.47%, 91.67% and 75%, respectively. Parkinsonism was the most commonly found adverse events (11.63%), following by insomnia (6.98%), sedation (6.98%) and akathisia (4.65%).
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Association between polymorphism of COMT gene and domestic violence in Han and Uygur on alcoholics in Xinjiang

Shaohong Zou, Manna Hu, Howard Huang, Zongfeng Zhao, Xiangdong Xu, Hongbin Dong

Corresponding author: Shaohong Zou

Department of Clinical Psychology, People`s Hospital of Xinjiang Uygur Autonomous Region, 91 Tianchi Road, Urumqi, Xinjiang, China. 830001, Tel:+8613699973051. E-mail: zoushaohong@126.com

**Abstract**

**Objective:** The domestic violence may be related to a number of neurotransmitters, and its associated gene, especially polymorphism of catecholamine-O-methyltransferase (COMT) gene, and gene expression. herein, we sought to investigate the association between COMT gene rs4680, rs4818 polymorphism and domestic violence in Han and Uygur on alcoholics in Xinjiang.

**Methods:** The methods of PCR and Direct PCR sequencing were conducted to detect rs4680 and rs4818 single nucleotide polymorphism loci of COMT gene in 280 domestic violence perpetrators and 180 normal controls. The association between the polymorphisms and violent behavior was analyzed with SPSS 17.0. The SHEsis program was applied to perform the combined effect analysis of the paired SNPs.

**Results:** The frequency of the genotypes and alleles of rs4680 and rs4818 polymorphisms in the domestic violence group were not statistically different from those in the normal control group (P>0.05). The two groups were divided in Han and Uygur ethnic group. The frequency of the genotypes and alleles of rs4680 and rs4818 polymorphisms in the domestic violence Uygur and Han ethnic group were not statistically different from those in the normal control group (P>0.05). The results in Han and Uygur ethnic group of the combined effect analysis showed that rs4818-rs4680 in the domestic violence group were not statistically different from those in the normal control group (P>0.05).

**Conclusion:** COMT gene rs4818, rs4680 polymorphism may be not associated with domestic violence on alcoholics in Xinjiang. Key words Domestic violence (DV); Violent behavior; catecholamine-O-methyltransferase (COMT); alcoholic.

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Association between autism susceptibility candidate 2 haplotypes and alcohol dependence in a Japanese population

Shin Narita¹, Kazuhiro Iwahashi², Eiji Yoshihara³, Atsuko Kawai³, Daisuke Nishizawa³, Kazutaka Ikeda³

¹ Laboratory of Physiology (Project of Neurophysiology), Course of Environmental Health Science, Graduate School of Environmental Health, Azabu University, 1-17-71 Fuchinobe, Chuo-ku, Sagamihara-shi, Kanagawa 252–5201, Japan. ² Health Administration Center, Azabu University, 1-17-71 Fuchinobe, Chuo-ku, Sagamihara-shi, Kanagawa 252–5201, Japan. ³ Addictive Substance Project, Tokyo Metropolitan Institute of Medical Science, 2-1-6 Kamikitazawa, Setagaya-ku, Tokyo 156–8506, Japan. ⁴ Koutokukai Total Health Clinic, 1180–5 Kunugiduka, Nanyo, Yamagata 999–2221, Japan.

**Abstract**

The autism susceptibility candidate 2 (AUTS2) gene has been implicated in multiple neurological disorders including autism. Recent genome-wide analysis has indicated that the AUTS2 gene is involved in the regulation of alcohol consumption. Therefore, we hypothesized that AUTS2 might be associated with the development of alcohol dependence, and focused on two single nucleotide polymorphisms (rs6943555 and rs9886351) in the AUTS2 gene, which have been studied extensively. In this exploratory study, we compared the genotype and allele frequencies of two polymorphisms in the AUTS2 gene between patients with alcohol dependence and healthy control subjects living in a Japanese provincial prefecture. We also examined whether or not the haplotypes consisting of these polymorphisms are related to alcohol dependence. The subjects of this study consisted of 64 patients with alcohol dependence (male: 50, female: 7, not available: 7; 57.34 ± 10.18 years) and 75 unrelated healthy people (male: 23, female: 52; 35.36 ± 9.06 years). The AUTS2 genotypes were determined by the polymerase chain reaction (PCR) - restriction fragment length polymorphism (RFLP) method. The study was approved by the ethics committees of the Tokyo Metropolitan Institute of Medical Science and Azabu University. No significant differences in the genotype and allele frequencies of the polymorphisms AUTS2 rs6943555 and rs9886351 were found between alcohol dependence and control subjects. On the other hand, the frequencies of the AUTS2 haplotypes were significantly different between them (p = 0.0187), and the patients with alcohol dependence showed a higher frequency of the rs6943555 and rs9886351 A-A haplotype as compared with the control group (26.73% of patients, 15.03% of controls). This suggests that the rs6943555 and rs9886351 A-A haplotype might affect the vulnerability to alcohol dependence pathogenesis. Further studies are needed to confirm the reproducibility of the results of this study with increased numbers of subjects.

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SORCS2 regulates alcohol withdrawal severity and excitatory synaptic transmission

Andre H. Smith¹, ², Ulrik Bolch³, Chureerat Phokaew², Peter L. Ovesen⁴, Seungyun Yeon⁵, Kevin P. Jensen⁶, Nancy Diazgranados⁷, Hongyu Zhao⁸, Lindsay A. Farrer⁹, David Goldman⁴, ⁵, Simon Glorup⁷, Henry R. Kranzler¹⁰, Anders Nykjær¹, ², Joel Gelernter¹, ²

¹ Interdepartmental Neuroscience Program and Medical Scientist Training Program, Yale School of Medicine, ² Division of Human Genetics, Department of Psychiatry, VA CT Healthcare Center and Yale School of Medicine ³ The Lundbeck Foundation Research Center MIND, Danish Research Institute of Translational Neuroscience DANDRITE - Nordic EMBL Partnership for Molecular Medicine, Department of Biomedicine, Aarhus University, DK-8000 Aarhus C, Denmark ⁴ Laboratory of Neurogenetics, National Institute on Alcohol Abuse and Alcoholism ⁵ Office of the Clinical Director, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, Bethesda, MD 20892, USA ⁶ Department of Biostatistics, Yale School of Public Health ⁷ Departments of Medicine (Biomedical Genetics), Neurology, and Ophthalmology, School of Medicine, and Departments of Biostatistics and Epidemiology, School of Public Health, Boston University, Boston, MA 02118, USA ⁸ Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania and Corporal Michael J. Crescenz VAMC, Philadelphia, Pennsylvania 19104, USA ⁹ Department of Neuroscience, Mayo Clinic, Jacksonville 32224, Florida.