associated with *MBD5* SNVs, but no typical characteristics have been observed. Although rare SNVs in *MBD5* identified in our study may not have marked impact on the neurodevelopmental features, the exact molecular mechanisms and networks affected by *MBD5* variants in SCZ and ASD remain unclear. Useful model systems that can address these questions will be needed to assess the impact of the SNVs discovered here. This study is important to understand the burden of rare SNVs in *MBD5*.

All procedures performed in this study involving human participants were approved by the Ethics Committee of the Nagoya University Graduate School of Medicine and conducted in accordance with the Helsinki declaration and its later amendments or comparable ethical standards. Written informed consent was obtained from the participants and from the parents of the patients under 20 years old.

## PM339A

### The GRIN2B and GRIN2A genes are associated with continuous performance test variables in attention-deficit/hyperactivity disorder

*Soo Yeon Kim, Sumin Lee*
*Seoul National University Hospital, Republic of Korea*
Running head: NMDA receptor genes and CPT in ADHD

**Abstract**

**Background**: Previous genetic studies have reported an association between attention-deficit/hyperactivity disorder (ADHD) and N-methyl-D-aspartate (NMDA) receptor genes. However, the neuropsychological impacts of NMDA genes in ADHD have not been identified. We examined the association between two NMDA receptor subunit-encoding genes (GRIN2A and GRIN2B) and continuous performance test (CPT) variables in ADHD and healthy controls.

**Methods**: A total of 253 ADHD patients and 98 healthy controls aged 6–17 years were recruited, and a Korean version of the CPT was administered to all participants. Each polymorphism was dichotomized into two groups, and the diagnosis, gene, and diagnosis-gene interaction effects on the CPT variables were examined after adjusting for age, sex and IQ.

**Results**: Significant differences were detected between the ADHD and control group with regard to all CPT variables (p values < 0.05). There were significant genotype effects on omission errors (p = 0.039) and response time standard deviations (p = 0.001) by GRIN2B variants and on omission errors (p = 0.00) and response time standard deviations (p=0.049) by GRIN2A variants. The GRIN2B C/C genotype group had committed more omission errors (p = 0.005) and had higher response time standard deviation (p < 0.001) scores than the C/T + T/T group in ADHD, but this association was not found in controls. The C/C genotype showed a longer response time only in the control group (p = 0.002). Omission errors differed according to GRIN2A genotype (with more impairment with the G/G genotype) in ADHD patients (p < 0.001), but not in controls.

**Conclusion**: These results suggest that the genetic variants of the GRIN2B and GRIN2A genes confer an increased susceptibility to attentional impairment in ADHD patients.

## PM339B

### Association between violence aggression and corticotropin-releasing hormone receptor 1 gene polymorphism in male adolescents

*LIU li, YU shunying, SHAO yang, ZHANG ran , XIE bin. Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine , Shanghai 200030, China. Tel:021-34289888.*

**Abstract**

**Objective:** To study the association between Corticotropin-releasing hormone receptor 1(CRHR1) gene polymorphism with violence aggression in male adolescents.

**Methods:** Two tagSNPs polymorphisms(CRHR1 , rs242924 , rs17689966) were genotyped by TaqMan SNP genotyping assay for 138 violence young male offenders,98 non-violence young male offenders and 153 normal adult controls. The distribution of allelic and genotypic frequencies in the case and control groups was analyzed. The violence young male offenders are divided into two sub-groups according to whether accompanied with Conduct Disorder symptoms. The two sub-groups are then respectively compared with the normal control group about the distribution of allelic and genotypic frequencies.

**Results:** The frequency of G allele in rs242924 of CRHR1 gene in violence group was higher than that of the normal control group (10.5% *vs*. 4.9%, *P*<0.017, *OR*=2.29, 95%*CI*=1.13~4.62). There were significant differences in genotype frequency of rs242924 among the three groups ($\chi^2$=9.916, *P*=0.024). Further analysis found that there is significant difference in genotype frequency in violence group compared with normal control group ( *P*=0.032 ) . There were no significant differences between the other groups. After the violence young male offenders divided into two sub-groups, there were no significant differences in allelic and genotypic frequencies among the three groups.

**Conclusions:** The variance of CRHR1 gene polymorphism may play a role in violent aggression in male adolescents, and should be further researched.

## PM340

### A resting-state functional magnetic resonance imaging investigation of the effectiveness of an anti-bullying intervention for adolescent perpetrators

*Bung-Nyun Kim[1], Johanna Inhyang Kim[1], Yun-hyong Kang[2], Kuk-ju Kweon[3]*
*[1]Division of Child and Adolescent Psychiatry, Department of Psychiatry, Seoul National University College of Medicine, Seoul, Republic of Korea. [2] Suicide and School Mental Health Institute, Hallym University, Anyang, Republic of Korea [3]Department of Psychiatry, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea*

**Abstract**

**Objective:** The purpose of this study was to investigate the effectiveness of an anti-bullying intervention targeted towards school bullying perpetrators using assessments of brain activity, cognitive function, and behavior.

**Method:** A total of 25 adolescent bullying perpetrators participated in an anti-bullying program. Prior to and after participation, resting-state functional magnetic resonance imaging (rs-fMRI) scans, the Wisconsin Card Sorting Test (WCST), and the Child Behavior Checklist (CBCL) was completed. Changes in the fractional amplitude of low-frequency fluctuations (fALFF) and scores on the WCST and CBCL were evaluated in the entire group and also separately in 2 groups that were categorized by commission of a single assault or repetitive assaults. The associations between changes in fALFF with the CBCL scores were examined.

**Results:** Following the intervention, all participants exhibited significant decreases in the subscores of the CBCL and