

forced swimming test, and antidepressant effects were attenuated by local injection of NBQX into the mPFC, indicating that both an mGlu2/3 receptor antagonist and ketamine exert the effects through AMPA receptor stimulation in the mPFC. In addition, we found that depletion of serotonin blocked antidepressant effects induced by local injection of LY341495 or ketamine into the mPFC. We also found that both compounds increased the c-Fos expression in the serotonin neurons in the dorsal raphe nucleus (DRN), which was blocked by local injection of NBQX into the mPFC, suggesting that both compounds may activate subsets of serotonin neurons in the DRN regulated by AMPA receptor stimulation in the mPFC.

These studies revealed that mGlu2/3 receptor antagonists exhibited similar antidepressant profiles with ketamine in animal models in that they exerted rapid and sustained effects and were effective in animal models refractory to current medications. Moreover, mGlu2/3 receptor antagonists may share mechanisms underlying antidepressant effects with ketamine at both synaptic and neural levels. Therefore, mGlu2/3 receptor antagonists may be useful as an alternative approach to treating patients with TRD. Other agents including GLYX-13 and GluN2B antagonists which could be alternatives to ketamine will also be briefly discussed.

## CP02: Anxiety

Title: Clinical perspective of Anxiety Disorders in Korea

Speaker 1: Dan Stein, South Africa

Speaker 2: Kang-Seob Oh, Republic of Korea

### Abstract

Since 21<sup>st</sup> century, anxiety disorders (Generalized Anxiety disorder, Panic Disorder, Social Anxiety disorder) are no more ignorant in Korea.

Many studies including epidemiologic, clinical characteristic, and treatment studies of anxiety disorders were published in Korea.

In this session, the speaker will present about prevalence rate of anxiety disorders, clinical characteristics of anxiety disorders, and treatment results studies of anxiety disorders in Korea.

The speaker will also introduce some treatment guidelines of anxiety disorders in Korea.

14.45 – 16.30

## S15: Cognitive Dysfunction in Depression: Enabling discovery and Treatment development

Chair: Barbara Sahakian, UK

Co-Chair: Si Tianmei, China

Speaker 1: Barbara Sahakian, UK

Title: Cognitive dysfunction in depression: the need for discovery, development and translation in this Domain

### Abstract

Depression is a common, distressing and debilitating disorder, which is frequently chronic and relapsing. Depression

is associated with problems in cold and hot cognition (Roiser et al, 2012; Roiser & Sahakian, 2013). These problems include impairments in sustained attention, forms of memory, planning and problem solving, decision-making, as well as negative attentional bias and over-sensitivity to negative feedback (Rock et al, 2013). Therefore, it is perhaps not surprising that workplace functionality is affected by depression, with both lost earnings due to absenteeism and lower productivity on return to work or presenteeism (Beddington et al, 2008). How can we improve the cognitive outcome for patients? Early detection of depression and early effective treatment should prevent or reduce the impact on cognition (Insel, Sahakian et al, 2012; Insel, Voon et al, 2013). Fast-acting medications targeting the glutamate system, especially the NMDA receptor, directly are currently in development (ketamine: Zarate et al, 2006). Recently approved drugs, such as vortioxetine, with multi-modal action have been shown to improve performance on some tests of cold cognitive function (Katona et al, 2012; McIntyre et al, 2014). It is concluded that cognition is an important target for treatment in depression (National Academies of Sciences, Engineering, and Medicine, 2015).

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