

## E-E2-05

### Natural products ameliorated the opioid-induced withdrawal syndrome

Heejeong Kim, Heena Lim, Junmo Kang, Seikwan Oh\*

Mok-dong, School of Medicine, Ewha Womans University, Seoul 158-710

This study was processed to the suitable antidote for the drug abuse by applying natural product which shows the anti-oxidant effect. Extract of *Scutella radix* and *Gardeniae fructus* show the anti-narcotic effect on the morphine dependence. In addition, red ginseng powder as well as red ginseng saponin shows anti-narcotic effect on the nalbuphine tolerance and dependence. Extracellular signal-regulated kinase (ERK) critical roles in cell growth and survival and drug abuse. Interestingly, the level of pERK was decreased in the co-treatment with nalbuphine and ginseng powder on the cortex. The level of pCREB was elevated in the striatum by the chronic nalbuphine treatment, and the elevation of pCREB was inhibited by the ginseng powder co-treatment. The level of nNOS and NR1 was not modulated by the treatment with nalbuphine or ginseng on the cortex, hippocampus and striatum in the rat brain. These results suggest that the oxidative stress might be involved in the opioid dependence and antioxidant effective natural products could be used to ameliorate the opioid withdrawal symptoms.

\*corresponding author: Tel. 02-2650-5749, email: skoh@ewha.ac.kr

## E-E2-06

### A novel analytical method to quantify ceramide 1-phosphate, bioactive lipid molecule, by immobilized metal affinity chromatography resin

Jae-Myung Yoo<sup>1,\*</sup>, Youn-Sun Lee<sup>1</sup>, Kyeong-Mi Choi<sup>1</sup>, Tack-Joong Kim<sup>1</sup>,

Yong-Moon Lee<sup>1</sup>, Seikwan Oh<sup>2</sup>, Bong-Sik Yun<sup>1</sup>, Yeon Hee Seong<sup>1</sup>, Hwan-Soo Yoo<sup>1</sup>

<sup>1</sup>College of Pharmacy and CBITRC, Chungbuk National University, Cheongju 361-763

<sup>2</sup>Department of Neuroscience, College of Medicine, Ewha Womans University, Seoul 158-710

Ceramide 1-phosphate (C1P) has emerged as a lipid mediator in phagocytosis and inflammation. In this study, we developed a new quantitative method of C1P. Lipids were extracted and C1P was purified by immobilized metal affinity chromatography (IMAC) beads. C1P was simultaneously dephosphorylated and deacylated with alkaline phosphatase and ceramidase, respectively, and the released sphingosine (Sph) was analyzed by HPLC. Limit of detection for C1P was about 1-2 pmol and lower limit of quantification was 5 pmol. Thus, the analytical method of C1P has a high specificity by the use of IMAC resin and enzymatic release of Sph from C1P, and the use of an internal standard provides this method with an accurate and reproducible quantification. The new method of C1P quantification can be applied to determination of phyto C1P content in medicinal herbs and agricultural products.

\*corresponding author: Tel. 043-261-3215, e-mail: neuro21c@chungbuk.ac.kr