presumably through interactions with Aβ. In this study we have investigated about this promotive effect of AChE and BChE on amyloid aggregation in vitro. Our preliminary results showed that both enzymes could significantly increase Aβ42 thioflavine T (ThT) fluorescence intensity, considered as a quantitive index of amyloid aggregation, when they were incubated with Aβ. In the continuation of these studies we will examine the synergistic effects of these two enzymes (if any) and the effects of their inhibitors of Aβ aggregation, with the use of techniques such as circular dichroism (CD) and atomic force microscopy (AFM) in addition to thioflavine T fluorescence spectroscopy.

Keywords: Beta Amyloid (Aβ), Fibril Formation, Acetylcholinesterase (AChE), Butyrylcholinesterase (BChE).

Abstract No.91

The Effects of Addictive Drugs on Zebrafish Behavior and its Correlation with Brain Metabolites Changes

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Drug addiction is a worldwide problem and is considered as a chronic brain disease and government spend huge resource to eradicate this problem. However, eradication could only be possible if we understand the behavior and molecular mechanism of addiction. Currently, numbers of animal models including zebrafish were used to understand the behavior and molecular mechanism of drugs addiction and withdrawal symptoms. We use zebrafish as model organism to understand how alcohol and nicotine separately or in combination affect known zebrafish behavior and brain metabolite. Our findings suggest that addictive drugs disrupt shoaling behavior and reduce frightening behavior in adult zebrafish but induce in larvae zebrafish. The effect, however, was less prone to highly active young adult fish but more prone to energy starved adult fish (such as hungry and old age or full-term egg bearing female fish). Drugs also produced progressively decreased feeding pattern with time compared to control except in case of nicotine where no significant feeding was observed. Feeding pattern however, recovered during drug withdrawal period except the fish group co-treated with alcohol and nicotine (co-abuse). This finding clearly suggests that addictive drugs can manipulate appetite. Drugs also found to influence learning and memory example, nicotine produced improve understanding of stimulating environment whereas alcohol causes decreases in this activity. In contrast, fish group co-abuse with drugs, the memory seemed to be largely compromise by the anxiolytic as well as anxiogenic effect. Further, sleeping pattern and duration during night was significantly disrupted in the fish co-abuse with drugs. Our zebrafish brain metabolites analysis also indicates that the addictive drugs manipulate the concentration of the metabolite critical in memory formation such as N-acetyl L-aspartate (excitatory activator) and taurine (excitatory inhibitor).

Keywords: Behavioral Study, Addictive Drugs, Addiction, Alcohol, Nicotine, Brain Metabolite.

Abstract No.92

Employment of Phage Display Technology To Construct GFP-Bearing Phage Nanoparticles with Peptide-Ligands Targeting Into Intestinal Epithelial Cells

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Gene and drug targeting is a promising strategy to treat various diseases. Over the recent years, phages thanks to attractive features such as lack of intrinsic tropism for mammalian cells, the presence of a capside structure surrounding DNA and the background of safe use have fostered various attempts to develop novel gene and drug carriers as attractive alternatives to existing viral and non-viral vehicles used for gene and drug delivery. To circumvent the problem of low efficiency of phage vehicles, one great technological achievement called phage display is exploited in order to express targeting ligands on the surface of phage thereby developing a platform for specific and targeted gene and drug delivery into cells. Here, our aim was to construct bacteriophage nanoparticles with the capability of targeted delivery into intestinal cells. To this end, XL1-Blue MRF′ bacterial cells were infected with M13 phages thereby amplifying phage particles. Following titering of phage particles by preparing serial dilutions of phage suspension, M13 plaques were obtained on solid medium. These plaques were employed for extracting double-stranded DNA of M13. GFP gene cassette was cloned in M13 bacteriophage genome as a reporter gene. Making use of phage display, two oligonucleotide