($P < 0.05$); with positive blood flow being more frequently detected by ultrasound scanning on both the day of HCG triggering and day of fresh embryo transfer for the TCM experimental group ($P < 0.05$). Additionally, the fertilization rate and number of high quality embryos in the TCM experimental group were higher than the control group ($P < 0.01$). The expression levels of the endometrial receptivity gene, VEGF, was higher in the TCM experimental group versus the control group on the day of fresh embryo transfer ($P < 0.05$); while the rate of fresh embryo transfer in the TCM experimental group was higher than the control group ($P < 0.05$).

Conclusions: The Bushen Yutai recipe could increase the estradiol levels during ovarian stimulation, yielding a higher number of oocytes, higher fertilization rate, and more high-quality embryos. It also improved the endometrial receptivity, as evidenced by higher levels of VEGF gene expression and more active endometrial blood flow. The Bushen Yutai recipe could thus enable more patients to receive fresh embryo transfer and avoid whole embryo vitrification.

K196 | Expressions of DNA methylation and hydroxymethylation in isoniazid induced injury liver in rats

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Objectives: To analyze the relationship between DNA methylation, hydroxymethylation and the rat liver injury caused by isoniazid.

Methods: Glutathione S-Transferase P1 (*GSTP1*), Cytochrome P450 1A1 (*CYP1A1*) and Cytochrome P450 2E1 (*CYP2E1*), and *TETI* protein, their regulatory protein, were selected as target genes and protein. Ninety six rats were randomly divided into the isoniazid (INH) group and control group. In the INH group, 48 rats were randomly divided into 6 groups which received INH 50 mg/kg/d on 3, 7, 10, 14, 21, 28 days respectively. In the control group, 48 rats were randomly divided into 6 groups, which received saline at same volume and time as that of INH group. The extent of liver injury was identified by estimating the alanine transaminase (ALT), aspartate transaminase (AST) levels and observing the pathological alter during the observation period. The expressions of DNA methylation and hydroxymethylation were analyzed using 5mC-5hmC analysis kits. The changes in *TETI* protein were analyzed via enzyme-linked immunosorbent assay (ELISA). The mRNA level of *TETI* was tested by RT-PCR.

Results: Experimental dose of INH could cause rats' liver injury gradually. In INH group, the cytosine content in *GSTP1 and CYP2E1* showed the downward trend. The contents of DNA methylation indicated the increasing trends in *GSTP1* and *CYP1A1* genes. The content of DNA hydroxymethylation showed the overall downward trend but with the marginal rise at the end in three target genes. The expressions of *TETI* protein and gene's mRNA fall to the lowest at 21 days ($P < 0.05$).

Conclusions: Changing of DNA methylation, hydroxymethylation in *GSTP1* and *CYP1A1* genes, and even their regulator protein, *TETI*, showed a certain regularity in isoniazid-induced rat liver injury.

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K198 | Design of MEG-compatible laser stimulator

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Objectives: Magnetoencephalography (MEG) has very sensitive magnetometers, and is easy to interfere with magnetic or electronic noise. Recently, laser stimulation has been used to investigate the physiology of brain structures involved in processing nociceptive inputs. Laser stimulation has been demonstrated to be reliable and robust in producing brain responses detectable with EEG. In this work, we use a novel laser device to stimulate the acupoint during MEG experimental design.

Methods: The stimulator system divides into two parts: one is in the scanning room, which requires a high electromagnetic-compatibility condition; the second part is for signal generator which is placed outside. These two parts of signal were connected with the filter panel to prevent noise interference.

Hardware:

(a). This core controller uses NuMicro™ NUC140 which adopts Advanced RISC Machine architecture.
(b). Power driver and Laser modules with wavelength 808 nm, 30 mW power.
(c). Optical fiber guides the coherent infrared to the scan room.

Only (c) allows in the scan room, others are outside to prevent noise.

Software:

The NUC140 is designed to handle the MEG trigger, signal

generation and experimental protocol, and programmed by state machine algorithm.

Results: Our study has validated that the interference between our system and MEG is negligible.

Using the Laser-Acupuncture system to induce brain activation, spectral and statistical analysis revealed significant 10–24 Hz band power in lower part of right temporal regions while stimulating left acupoint K1.

Conclusions: A MEG-compatible equipment for laser evoked is well designed in this study.

NA16978 | Effect of heat stress on the expression of TNF-α in the liver of mice

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Aims: TNF-α (tumor necrosis factor alpha, TNF-α) is a cell signaling protein (cytokine) involved in systemic inflammation and is one of the cytokines that make up the acute phase reaction. The exposure to heat stress or other stressful stimuli could induce heat shock proteins in cells of all living organisms. But the effects of heat stress at different temperature on TNF-α expression of hepatocytes has not been studied until now.

Methods: Mice were respectively heated to 40°C, 42°C, 44°C and 46°C for 20 minutes and recovered at room temperature for 8 hours in normal feeding condition. The control (unstressed) animals were kept at room temperature and sacrificed along with their counterparts. The expression level of TNF-α was detected by western blotting and Real-time quantitative PCR in heat-stressed mice and control mice. Apoptosis in the hepatocytes of mice were further analyzed using a commercial kit based on the TdT-mediated dUTP-digoxigenin nick end labelling (TUNEL) of apoptotic cells in different temperature.

Results: Our results show that the expression of TNF-α and hepatocyte apoptosis were significantly up-regulated with the temperature increasing from 42°C to 46°C ($P < 0.01$) heat stress in company with AST and ALT levels increasing ($P < 0.05$), but showed no obvious difference at 40°C heat stress ($P > 0.05$) in comparison with the controls.

Conclusions: We presume that TNF-α may be an important factor to induce liver injury by inducing hepatocyte apoptosis in heat stress. In addition, high temperature stress may promote liver injury by inducing TNF-α expression in the workers who work in hot environment.

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NA16979 | The expression analysis of ADAM12 during acute liver injury induced by acetaminophen in mice

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Aims: A disintegrin and metalloprotease 12 (ADAM12), a multi-domain glycoprotein belong to the reprolysin zinc metalloprotease family was highly expressed in liver tissue of human and mouse. But the expressed dynamic change and roles of ADAM12 have not been studied during acute liver injury induced by acetaminophen (AAP).

Methods: Fifty mice were randomly divided into two groups: normal group ($n = 20$) and experimental group ($n = 60$). The mice in experimental group were respectively drawn blood by removing the eyeballs and serum was separated to detect the activity of AST and ALT at 6, 24, 42 and 72 hours after i.p. injection with 550 mg/kg acetaminophen (AAP). We also detected the activity of serum AST and ALT in the mice of normal group. The expression of hepatic ADAM12 at protein and mRNA levels was detected by western blot and qRT-PCR in the mice of normal group and experimental group at different time points after AAP injection.

Results: The expression of ADAM12 were significantly up-regulated ($P < 0.01$) at 6 hours, and the expression of ADAM12 reached the highest level at 24 hours ($P < 0.05$). After that, the expression of ADAM12 was gradually decreased. The expression of ADAM12 was significantly decreased at 42 hours ($P < 0.01$) and then recovered closed to the normal level at 72 hours after AAP injection.

Conclusions: ADAM12 were remarkably differently expressed during acute liver injury induced by AAP, which indicated that ADAM12 may play important roles to promote liver injury induced by AAP in mice.

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