Cinnamomi. NXT has been used in the treatment of cardiovascular and cerebrovascular diseases like coronary artery disease in clinic. Due to the complex combination of herbs, the chemical analysis and mechanism are still not clear. In this research, based on UPLC/Q-TOF for ingredients investigation, we used the method of network pharmacology to explore the potential effect of NXT and the evidence of the rationalization on herb combinations.

METHODS We used the five principles of drug absorption as a judgment rule to identify the chemical compositions that could be absorbed in blood form the all chemicals of NXT. Moreover, we predicted the main targets and related pathways of absorbable components by PharmMapper, Universal Protein and Molecule Annotation System. Finally, we constructed the networks including multiple components (from different source of herbal medicines) with multiple targets and pathways by Cytoscape.

RESULTS We got 83 chemical compositions from NXT, of which 52 predictions could be absorbed. By analyzing network pharmacological approach, there were 133 targets that could be regulated by these components. In addition, these targets were involved in 85 pathways (P <0.01), including NFAT and Hypertrophy of the heart (Transcription in the broken heart), Nuclear Receptors in Lipid Metabolism and Toxicity, Aspirin Blocks Signaling Pathway Involved in Platelet Activation, VEGF, Hypoxia, and Angiogenesis and Signaling Pathway from G-Protein Families, which were all closely associated with diseases of the cardiovascular and cerebrovascular system.

CONCLUSIONS The 52 main active components of NXT are included amino acids, senkyunolides, flavonoids, and organic acids. NXT plays a dramatic role in the treatment of cardiovascular and cerebrovascular diseases, especially in the pathway NFAT and Hypertrophy of the heart.

GW26-e0097 The relationship of the genetic polymorphism of ApoE and the stability of carotid plaque
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OBJECTIVES The aim of the present study was to investigate the role of genetic polymorphisms of ApoE in carotid artery atherosclerosis and the instabili ty of the plaque.

METHODS 238 subjects were divided into 3 groups: the instable plaque group, stable plaque group and control group according to the result of carotid ultrasound examination. The genotypes of ApoE and serum ApoE concentration was measured. The relationship between the genetic polymorphism of ApoE and the instability of carotid plaque was studied with linear and logistic regression analysis.

RESULTS ①The frequency of ε4 allele in the CAS subjects was higher than the health people. It was higher in instable plaque group than the subjects without ε4 allele. ②The ApoE ε4 allele is an independent relative factor of the instable plaque when age, sex and blood fat were adjusted in logistic regression analysis. ③The level of Hs-CRP and MCP-1 in serum of the subjects with ε4 allele were higher than the subjects without it, which indicated that the inflammatory activity in subjects with ε4 allele was stronger than the subjects without ε4 allele.

CONCLUSIONS ApoE polymorphism was associated with carotid atherosclerosis and the instability of plaques. Patients with the ApoE4 isoform had a more severe CAS than the subjects without the ApoE ε4 allele. The genetic polymorphism of ApoE has influenced the atherosclerosis through adjusting the blood-fat or the chronic inflammation status.

GW26-e1073 Cellular repressor of EIA-stimulated gene overexpression in bone mesenchymal stem cells improves the treatment of myocardial infarction in rats
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OBJECTIVES To study the effects of cellular repressor of EIA-stimulated genes (CREG) in bone mesenchymal stem cells (BMSCs) after transplantation into infarcted heart in rats.

METHODS 50αl PBS or 1.5-10^6 (Norm) BMSCs, (GFP) BMSCs or (CREG) BMSCs were implanted in myocardial infarction rat models. Cardiac function, fibrosis, apoptosis and angiogenesis were analyzed by echocardiography, masson, western blot and immunofluorescence staining, respectively. ELISA, western blot and matrigel assay were used in vitro to detect vascular endothelial growth factor (VEGF) secretion, signaling molecule expression, and angiogenic tube formation.

RESULTS Compared with group (Norm) BMSCs and group (GFP) BMSCs, prolonged cardiac function (14d LVEF: 51.84±1.14%; LVFS: 24.36±1.22%), decreased fibrosis (14d Fibrotic area: 28.32±1.12%) and apoptosis and increased angiogenesis were found in group (CREG) BMSCs. In vivo and in vitro, VEGF secretion from (CREG)BMSCs was markedly enhanced. In vitro, angiogenic tube formation in (CREG) BMSC supernatants significantly increased. CREG activated hypoxia-inducible factor-1α (HIF-1α), but not HIF-1β. Knockdown of HIF-1α with siRNA decreased VEGF secretion and angiogenic tube formation. Notably, CREG did not influence HIF-1α mRNA synthesis but inhibited the expression of Von Hippel-Lindau (VHL), a key protein that regulates HIF-1α degradation.

CONCLUSIONS Cellular repressor of E1A-stimulated gene overexpression in BMSCs could improve the treatment of myocardial infarction in rats.

GW26-e1424 Study on the regulatory functions and the Mechanism of Protein Kinase C and verapamil to SK2 channels in Human Atrial Fibrillation
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OBJECTIVES Small-conductance Ca2+-activated K+ (SK) channels are recognized as a new ion channel which associated with atrial fibrillation (AF). This study aims to investigate regulatory functions and the mechanism of protein kinase C (PKC) and verapamil to SK2 in human patients with atrial fibrillation.

METHODS 30 patients undergoing extracorporeal circulation cardiac surgery were divided into 2 groups, 18 patients with AF and 15 patients with SR. The regulatory functions of PKC to SK2 channels were detected in isolated human atrial muscle cells with whole-cell patch clamp experiments.

RESULTS The SK2 channel current density at -130mV was (-5.1±0.32) PA/pF in SR group vs. (-10.71±0.73) PA/pF in AF group (nSR=5, nAF=5, P<0.05). The ratio of SK2 channel currents in the integrated inward currents was (22.20±1.09)% vs. (28.97±1.81)% in SR group vs. AF group (nSR=5, nAF=5, P<0.05). Inhibition of SK2 channel currents by PMA in AF group was larger than the SR group. The inhibition ratio of SK2 channel current at -130 mV was (8.39± 0.80) % in SR group vs. (20.9±0.70) % in AF group (nSR=5, nAF=5, P<0.05). Verapamil reduced the ratio of SK2 channel in the integrated inward currents at -130 mV by (13.58±2.01)% in SR group vs. (20.41±1.34)% in AF group (nSR=5, nAF=5, P<0.05). The ratio of SK2 channel currents in the integrated inward currents with verapamil and PMA at -130 mV reduced to (2.18±0.42)% in SR group vs. (4.57±0.45)% in AF group (nSR=5, nAF=5, P<0.05).

CONCLUSIONS SK2 channel up-regulated in atrial fibrillation. There is a certain correlation among PKC,verapamil and SK2 channels. We speculate that PKC-related pathway and verapamil-related pathway may regulate the function of SK2 channel.

GW26-e2198 A novel polymorphism of the CYP19 gene is associated with essential hypertension in China
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OBJECTIVES Aromatase which encoded by CYP19 gene is a key enzyme in the conversion of androgen to estrogen and play an important role in the balance of the sex hormone levels. The sex hormone has a causal role in the development of cardiovascular disease. The goal of this study was to investigate the interaction between the SNPs in CYP19 gene and essential hypertension.