Conclusion: Numb has a profound effect on promoting G2/M arrest of TECs through stabilizing p53 protein. Depletion of Numb markedly attenuates G2/M arrest of proximal tubules which in turn reduces TIF. Numb might be a novel therapeutic target for the treatment of tubulointerstitial fibrosis.

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0349
Cholesterol Sensor SCAP Mediates Phosphate-induced Vascular Calcification via Lipid-independent Pathway
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Background: Dyslipidemia is one of the risk factors contributing to the high calcification burden in the arteries of CKD patients. However, the metabolism by which lipids interact with mineral metabolism remains unknown. We propose that Sterol Regulatory Element Binding Protein (SREBP) Cleavage Activating Protein (SCAP), which is the central controller of lipid metabolism, plays a role in VSMC calcification.

Methods: Calcium deposition was observed and colorimetrically analyzed by Alizarin Red S staining and o-cresolphthalein complexone method. The expression of related genes and proteins were analyzed by real-time RT-PCR and Western blotting methods. The co-expression of proteins was observed by confocal microscopy and flow cytometry. The influences of calcifying medium and SCAP to VSMCs were investigated by TUNEL method, wound scratch method and cell cycles analysis with PI staining.

Results: We demonstrated that phosphate markedly stimulated the expression of SCAP in a dose dependent manner in human primary culture of VSMC. We established a VSMC calcification model in vitro with 2.0 mM phosphate and 2.7 mM calcium, in which SCAP expression was positively associated with the expression of osteogenic marker factors cbfa1. Overexpression SCAP by pcMV-SCAP plasmid transfection led to more calcium deposition, accompanying with up-regulated expression of osteogenic markers cbfa1, BSP and ALP; and down-regulated expression of VSMC maker α-SMA. These effects were blocked by knocking down SCAP by applying siRNA against SCAP even in the presence of LPS which plays a role as calcification inducer. Further, knocking-down SREBP2, a SCAP target gene for lipid homeostasis did not affect SCAP induced calcium deposition, suggesting that SCAP mediates phosphate induced vascular calcification in a lipid independent pathway.

Conclusion: Our data strongly suggest that SCAP is a novel mediator of phosphate induced vascular calcification, and its pro-calcification effect is independent of its traditional regulatory function in lipid metabolism.

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0351
Effect of HIF-1 on Anemia of the 5/6 Nephrectomy Kidney of Rats with Chronic Renal Failure
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Objective: To explore HIF-1 on anemia of the 5/6 nephrectomy kidney of rats with chronic renal failure.

Methods: SD rats were divided randomly into three groups: control group; model group; and EPO group. From the 3rd week the EPO group was injected with recombinant human EPO 40 IU/Kg, biweekly. The animals were sacrificed after 3 months, collecting blood and tissue samples of residual kidney. Renal pathology was observed by HE stain. We examined HIF-1 protein by immunofluorescence and Western blotting.

Results: (1) The rats renal function. Compared with the control group, there were no significant changes in renal function in the control group after injection of EPO. (2) The renal pathological changes in residual renal tissue. There were no significant changes in tubules, glomeruli and renal interstitium in the control group. It appears segmental glomerular sclerosis, focal renal interstitial fibrosis and epithelial atrophy in the model group. There were no significant changes in the control group after injection of EPO. (3) The changes of anemia. Compared with the control group, the Hb of model group dropped 11.3 ± 0.52 g/L. However, after subcutaneous injection of EPO, anemia improved, namely Hb 12.55 ± 0.53 g/L. (4) HIF-1 expression. Compared with the control group, HIF-1 nucleus positive was 28 ± 1.32 in model group, and HIF-1 main shrinking expansion of renal tubular epithelial cells. After injection of EPO, the expression of HIF-1 was reduced, that HIF-1 nucleus positive expression of 20 ± 1.48 (P < 0.05).

Conclusion: HIF-1 expression can improve renal anemia in rats with chronic renal failure.