**0202**

**Vitamin D Receptor may Participate in the Epithelial-Mesenchymal Transition of Mouse Podocytes Induced by High Glucose Through Wnt/β-catenin**

Fangxing Zhang, Jia Guo, Congqun Lu, Zhangsuo Liu
*The First Affiliated Hospital of Zhengzhou University, Zhengzhou, China*

**Objective:** The expression of vitamin D receptor (VDR) was decreased in diabetes patients. Our primary results found that the expression of VDR was decreased in mouse podocytes induced by high glucose, companied by the epithelial-mesenchymal transition of podocytes. This experiment was designed to investigate the mechanism that VDR take part in the epithelial-mesenchymal transition of podocytes.
**Methods:** Conditionally immortalized mouse podocytes cell line in vitro were adopted. Podocytes incubated in RPMI-1640 medium with high glucose (25 mmol/L) or normal glucose (5.6 mmol/L). And normal glucose were divided into the following three groups according to the experiment's design: (1) normal glucose group (5.6 mmol/L); (2) scramble-siRNA group: normal glucose + 100 pmol/L scramble-siRNA; (3) VDR-siRNA group: normal glucose + 100 pmol/L VDR-siRNA. After 36 hours, cells were harvested for protein. The protein expressions were detected by both western-blot and qRT-PCR. Meanwhile, the change of monolayer barrier function is tested by using the detection of the albumin influx. The co-localization of VDR and β-catenin was detected by immunofluorescence.
**Results:** (1) After high glucose treatment, the protein and gene expressions of VDR, nephrin and podocin were down-regulated ($P < 0.05$) while β-catenin, α-SMA and MMP9 was up-regulated ($P < 0.05$). The albumin flow was increased. Additionally, more VDR transferred to the nuclear and increased the co-localization of β-catenin in podocytes under high glucose. (2) Compared with nomal glucose and scrambled-siRNA group, the the protein and gene expressions of VDR nephrin and podocin was down-regulated ($P < 0.05$), and α-SMA, MMP9 and β-catenin was up-regulated ($P < 0.05$). The albumin flow of podocytes was increased ($P < 0.05$).
**Conclusion:** Vitamin D receptor may participate in the epithelial-mesenchymal transition of mouse podocytes induced by high glucose through wnt/β-catenin.

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**0203**

**Tristetraprolin Overexpression Ameliorated Inflammation in db/db Mice and Mouse Podocytes**

Qian Zhang, Jia Guo, Zhangsuo Liu
*The First Affiliated Hospital of Zhengzhou University, Zhengzhou, China*

**Objective:** Tristetraprolin (TTP) is a well-characterized, zinc finger-containing, RNA-binding protein, which plays a role in the regulation of inflammatory factor expression by targeting the 3' untranslated region (3'UTR). In the current study, we investigate whether TTP modulates inflammation in high glucose induced-podocytes and in db/db mice kidneys.
**Methods:** Differentiated mouse podocytes were treated by high glucose, and TTP expression and inflammatory factors was measured by quantitative real-time PCR or ELISA. TTP siRNA or lentiviral vectors containing TTP sequences were transfected into podocytes to down-regulate or up-regulate TTP expression. Db/db mice were used as the diabetic model in in vivo experiment. At the age of 10 weeks, db/db mice were injected via tail vein with lentiviral vectors containing TTP sequences. At the age of 14 weeks, the lentivirus injection was repeated. Mices were sacrificed at the the age of 22 weeks. Inflammatory factors (IL-6, IL-18, TNF-α), fibrosis markers (fibronectin, MMP-9) and podocyte markers (nephrin, podocin) in mice kidneys were examined by western blot and immunohistochemistry. Urine albumin to creatinine ratio and serum creatinine was also detected.
**Results:** TTP was down-regulated while IL-6, IL-18, TNF-α were up-regulated in high glucose-induced mouse podocytes. Silencing TTP by siRNA induced inflammatory factor expression. Overexpression of TTP reduced the expression of inflammatory factors in high glucose-induced podocytes. In vivo, TTP expression was significantly decreased in db/db mice kidneys compared with db/m mice. Through the lentivirus injection, TTP expression was up-regulated in the kidneys of db/db mice at the 22nd week. Overexpression of TTP caused reduced expression of inflammatory factors (IL-6, IL-18, TNF-α) and fibrosis markers (fibronectin, MMP-9), as well as restored expression of podocyte markers (nephrin, podocin) in the diabetic kidneys, indicating a protective role in db/db mice. Urine albumin to creatinine ratio was also decreased in db/db mice overexpressing TTP.
**Conclusion:** TTP is involved in the regulation of renal inflammation in db/db mice.

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**0206**

**The Expressions of Vitamin D and its Receptor in Patients with Diabetes Associated with Proteinuria and Diabetic Nephropathy**

Yang Yang, Guo Jia, Zhangsuo Liu
*The First Affiliated Hospital of Zhengzhou University, Zhengzhou, China*

**Objective:** Vitamin D receptor (VDR) is a member of the nuclear receptor superfamily, and there has no report about the expression of Vitamin D and its receptor in patients with diabetes associated with proteinuria and diabetic nephropathy. So, this study aimed texplore the role of VDR in diabetic nephropathy.
**Methods:** (1) 65 patients who had been diagnosed with T2DM (with or without albuminuria) were enrolled in this study and 25 healthy control subjects were enrolled (NC group). The patients were classified according to the ratio of urinary excretion of albumin/creatinine (ACR). Diabetic patients without proteinuria (DM group, ACR: less than 30 mg/g, n = 25), with microalbuminuria (DN1 group, ACR: 30 to 300 mg/g, n = 24) and clinical proteinuria (DN2 group, ACR: more than 300 mg/g, n = 18). 25 diabetic nephropathy patients who were diagnosed by renal biopsy (DN3 group). (2) The expressions of VD and VDR were investigated by ELISA, qRT-PCR, and immunohistochemical staining.
**Results:** Plasma VD and VDR levels were significantly lower in DN2 and DN3 groups as compared with NC group (plasma VD 0.78 ± 0.24 and 0.88 ± 0.29 vs. 2.32 ± 1.33 ng/ml, $P < 0.05$, VDR 157.52 ± 98.36 and 164.20 ± 64.50 vs. 325.33 ± 194.68 ng/ml, $P < 0.05$). Urinary VD and VDR levels were significantly elevated in DN2 and DN3 groups as compared with NC group (urinary VD 1.34 ± 0.58 and 1.42 ± 0.44 vs. 1.18 ± 0.65 ng/ml, $P < 0.05$, VDR 83.60 ± 31.78 and 88.40 ± 28.10 vs. 60.93 ± 12.03 ng/ml, $P < 0.05$).
**Conclusion:** These results verify that VDR may play a role of renal protection in diabetic nephropathy.

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**0207**

**Sirt1 Might Modulate the Expressions of TTP and Inflammatory Factors Through MAPK P38 in High Glucose-induced Mouse Podocytes**

Minglei Lu, Jia Guo, Zhangsuo Liu
*The First Affiliated Hospital of Zhengzhou University, Zhengzhou, China*

**Objective:** Sirt1 (silent information regulator 1), a type III protein deacetylase, is considered as a novel anti-aging protein involved in regulation of inflammation in diabetic nephropathy. The objective of this study was to observe the expressions of sirt1, TTP and inflammatory factors in high glucose-induced mouse podocytes, and initially explore its regulatory mechanism.
**Methods:** (1) Differentiated podocytes were divided into: the normal glucose group (NG: glucose 5.6 mM), the HG groups (HG: 25 mM of glucose), and the osmotic control group (NG+M: glucose 5.6 mM and mannitol 25.6 mM). Sirt1, TTP, IL-6 and IL-18 were assessed using quantitative RT-PCR, western blot and immunofluorescence. (2) In normal glucoseconditon, MAPK P38, TTP, IL-6 and IL-18 were assessed using quantitative RT-PCR, western blot by using a sirt1 small-interfering RNA (siRNA) transfection.
**Results:** (1) Sirt1 mainly located in the nucleus of mouse podocytes in NG group. In comparison with NG and NG+M, HG statistically significantly decreased the expressions of sirt1and TTP, and increased the IL-6 and IL-18 expressions. (2) Significant decreased expressions of TTP and MAPK P38 was observed in NG sirt1 siRNA transfection, and the higher IL-6 and IL-18 expressions.
**Conclusion:** Sirt1 might modulate the expressions of TTP through MAPK P38 in mouse podocytes.

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