KSN 2022
SEOUL, KOREA MAY 26 - 29

Abstract Submission No. : 1104

Long noncoding RNA FGD5-AS1 sponges microRNA-497-5p to regulate hyperuricaemia-induced renal interstitial fibrosis in a rat model involving LIM domain only 7

JiaLi Wei, Ying Zhang
Department of nephrology, Hainan Affiliated Hospital of Hainan Medical University, China

Objectives: To explore the roles of lncRNA FGD5 antisense RNA 1 (FGD5-AS1) and miR-497-5p in renal interstitial fibrosis (RIF)

Methods: Rat hyperuricaemia models were constructed and respectively treated with altered FGD5-AS1 or miR-497-5p to detect biochemical indices including uric acid (UA), serum creatine (SCr), blood urea nitrogen (BUN) and 24-h urine protein. The pathological changes and score, fibrosis degree and RIF index in rat kidney were determined. Expression of FGD5-AS1, miR-497-5p, LIM domain only 7 (LMO7), ZO-1 and Occludin was assessed

Results: In kidney tissues from hyperuricaemia rats, FGD5-AS1 and LMO7 were downregulated while miR-497-5p was upregulated. Overexpressed FGD5-AS1 or reduced miR-497-5p reversed RIF-induced changes in hyperuricaemia rats, while downregulated FGD5-AS1 or upregulated miR-497-5p had opposite effects

Conclusions: Overexpressed FGD5-AS1 downregulated miR-497-5p to ameliorate RIF in hyperuricaemia rats by promoting LMO7

figure

Figure 1 The 24-h urine, UA, BUN and SCr of rats were measured in the control group and the model group. Hyperuricaemia induces RIF in a rat model.

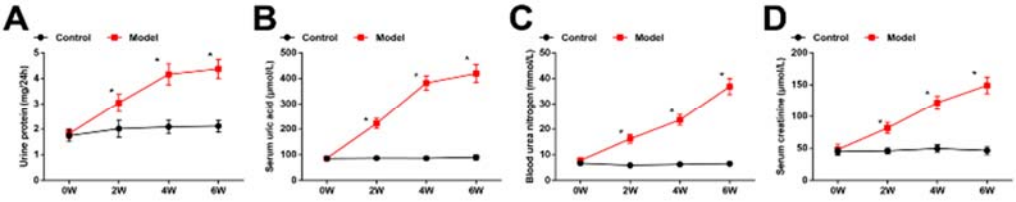

Figure 2 Effect of upregulated FGD5-AS1 or downregulated FGD5-AS1 on the pathological changes and score of rats by HE staining. Overexpressed FGD5-AS1 attenuates pathological change while silenced FGD5-AS1 aggravates pathological change in hyperuricaemia rats.

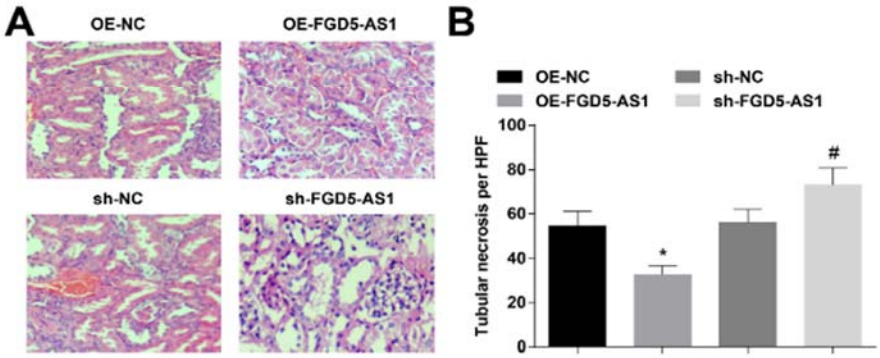

Figure 3 Effect of upregulated FGD5-AS1 or downregulated FGD5-AS1 on the fibrosis degree and RIF index in rat kidney tissues by Masson staining. Overexpressed FGD5-AS1 attenuates RIF while silenced

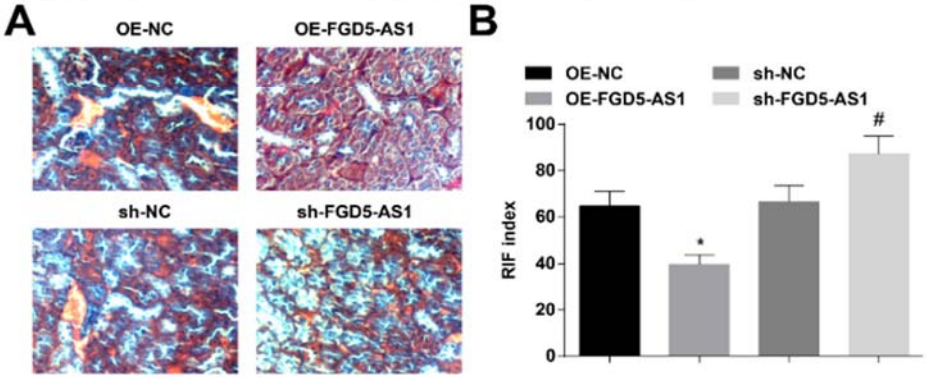

Figure 4 The correlation between FGD5-AS1 and miR-497-5p was determined by dual luciferase reporter gene assay. FGD5-AS1 binds to miR-497-5p to inhibit its expression.

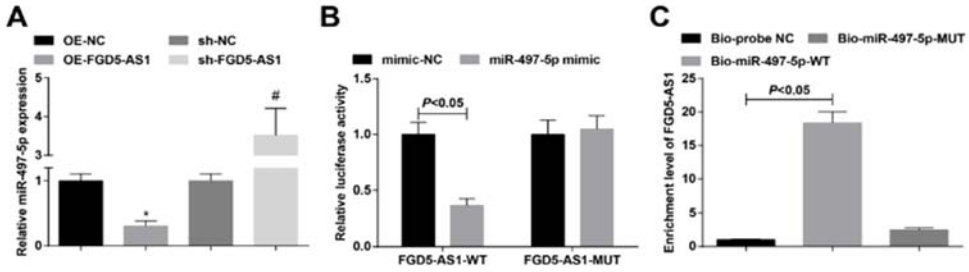

Figure 5 Effect of downregulated miR-497-5p or upregulated miR-497-5p on α-SMA and TGF-β1 contents in rat kidney tissues by immunohistochemical staining. Downregulated miR-497-5p decreased α-SMA and TGF-β1 contents while upregulated miR-497-5p increased α-SMA and TGF-β1 contents in hyperuricaemia rats.

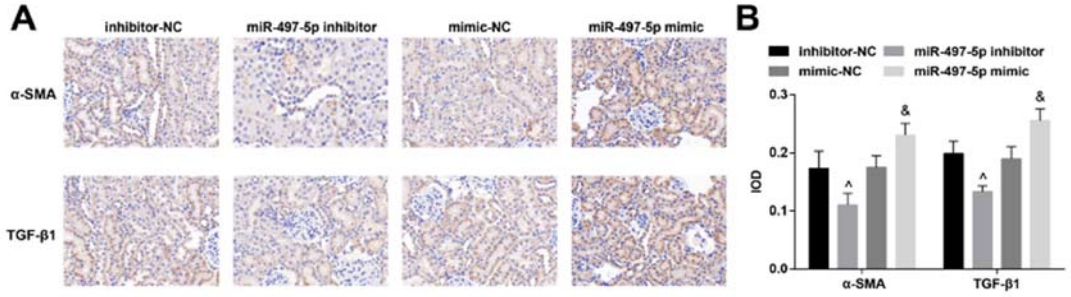

Figure 6 The correlation between miR-497-5p and LMO7 was determined by dual luciferase reporter gene assay. MiR-497-5p targets and regulates the expression of LMO7.