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FULLY VIRTUAL MEETING
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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

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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 1.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.

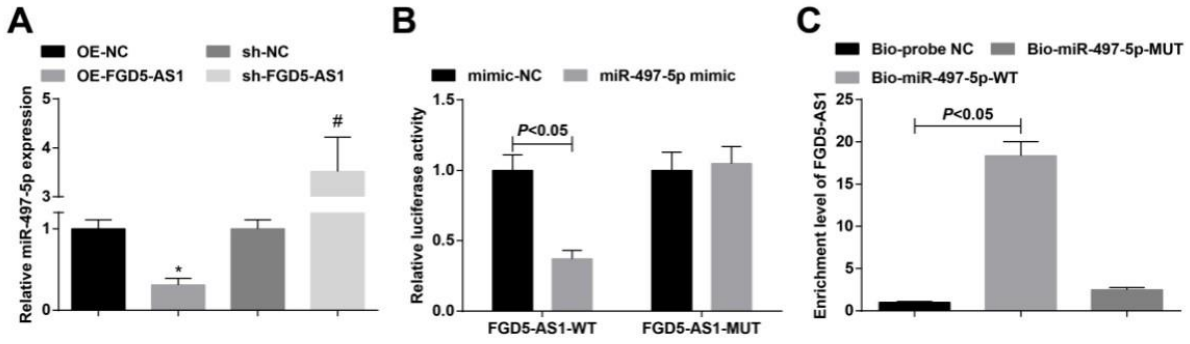
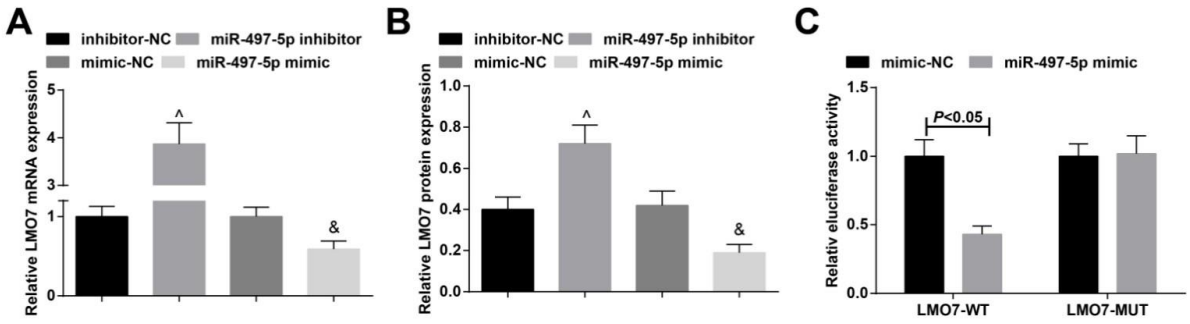


Figure 2.The correlation between miR-497-5p and LMO7 was determined by dual luciferase reporter gene assay. MiR-497-5p targets and regulates the expression of LMO7.


A
inhibitor-NC
miR-497-5p inhibitor
mimic-NC
miR-497-5p mimic
Relative LMO7 mRNA expression
5
4
3
1
0
^
&
B
inhibitor-NC
miR-497-5p inhibitor
mimic-NC
miR-497-5p mimic
Relative LMO7 protein expression
1.0
0.8
0.6
0.4
0.2
0.0
^
&
C
mimic-NC
miR-497-5p mimic
Relativ eluciferase activity
1.5
1.0
0.5
0.0
P<0.05
LMO7-WT
LMO7-MUT