



## Objective

Studies shown that miR-126 plays a protective role in periodontitis, and macrophage polarization plays an important role in the pathogenesis of periodontitis and diabetes. However, it is unknown whether microRNA-126 (miR-126) affects the polar phenotype of macrophages in diabetic periodontitis. This study was aimed to investigate the regulation of miR-126 on the polarization of macrophages under the high glucose environment, and to provide experimental evidence for exploring the pathogenesis of diabetic periodontitis.

## Method

1. THP-1 monocytes were treated with 50nM phorbol ester (PMA) for 48h.
2. Incubate macrophages in low-glucose (5.5 mmol/L) and high-glucose (25 mmol/L) medium for 48 hours, real-time polymerase chain reaction (RT-PCR), enzyme-linked immunosorbent assay (ELISA), Western blot was used to detect changes in miR126, macrophage polarization-related factors, inflammatory factors, and inflammation-related pathways.
3. After high glucose stimulation, the miR-126 mimic was used to transfect macrophages, and the effect of miR-126 on the polarization of macrophages and the expression of related pathways was detected by real-time quantitative RT-PCR, ELISA, and Western blot.

## Result

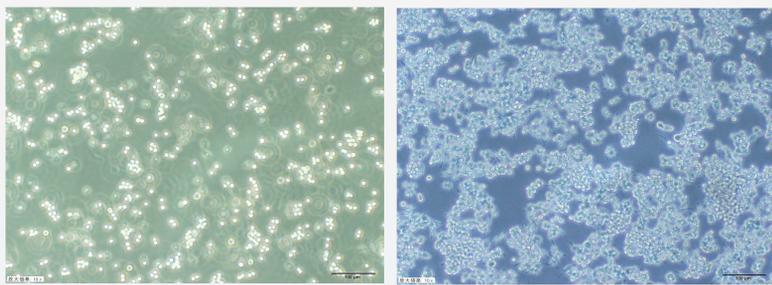


Figure 1 Cell morphology of THP-1 mononuclear macrophages transformed by PMA

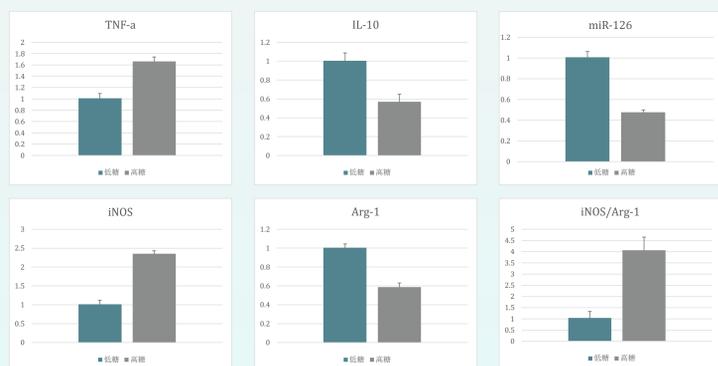


Figure 2 Medium with different sugar concentrations stimulates THP-1 mononuclear macrophages for 48h PCR results of miR-126 and each cytokine

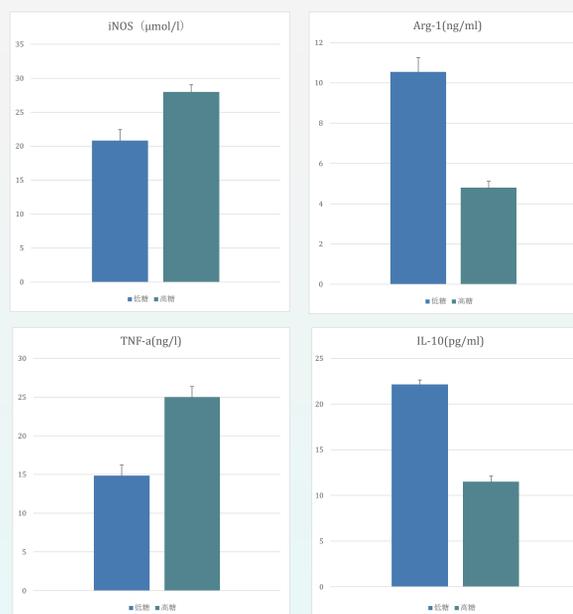


Figure 3 Medium with different sugar concentrations stimulates THP-1 mononuclear ELISA results of cytokines in macrophages at 48h

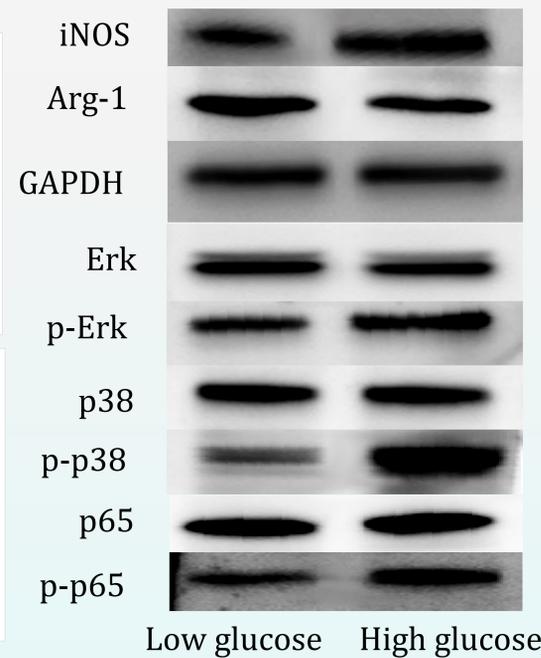


Figure 4 Different sugar concentration medium stimulates THP-1 mononuclear Western blot results of related proteins on macrophages after 48 hours



Figure 5 High glucose stimulation after miR-126 transfection PCR results of miR-126 and each cytokine

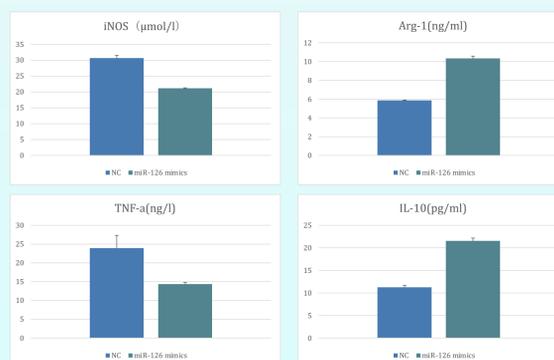


Figure 6 ELISA results of various cytokines under high glucose stimulation after miR-126 transfection

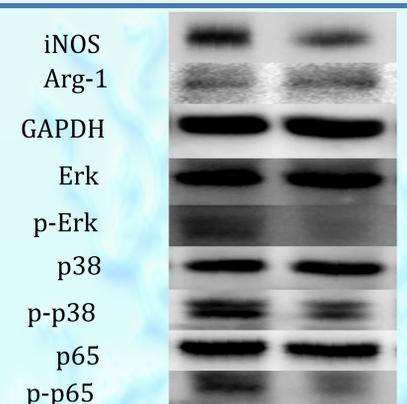


Figure 7 Western blot results of related proteins under high glucose stimulation after transfection of miR-126

## Conclusion

high glucose can promote macrophage M1 polarization and inflammatory response. This effect can be inhibited by miR-126, indicating that miR-126 may play a protective role in diabetic periodontitis.