

Anti-Diabetic Agent Sodium Tungstate Induces the Secretion of Pro- and Anti-Inflammatory Cytokines by Human Kidney Cells

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© 2016 Wiley Periodicals, Inc. Diabetic kidney disease (DKD) is the major cause of end stage renal disease. Sodium tungstate (NaW) exerts anti-diabetic and immunomodulatory activities in diabetic animal models. Here, we used primary cultures of renal proximal tubule epithelial cells derived from type-2-diabetic (D-RPTEC) and non-diabetic (N-RPTEC) subjects as in vitro models to study the effects of NaW on cytokine secretion, as these factors participate in intercellular regulation of inflammation, cell growth and death, differentiation, angiogenesis, development, and repair, all processes that are dysregulated during DKD. In basal conditions, D-RPTEC cells secreted higher levels of prototypical pro-inflammatory IL-6, IL-8, and MCP-1 than N-RPTEC cells, in agreement with their diabetic phenotype. Unexpectedly, NaW further induced IL-6, IL-8, and MCP-1 secretion in both N- and D-RPTEC, together with lower levels of IL-1 RA, IL-4, IL-10, and GM-CSF, suggesting that it may contribute to th