

### **Urinary MMP-9 activity is a marker of decline of renal function in patients with type2 diabetes mellitus**

Van der Zijl NJ, Hanemaaijer R, Tushuizen ME, Schindhelm RK, Boerop J, Rustemeijer C, Bilo HJ, Verheijen JH, Diamant M. (2010) Urinary matrix metalloproteinase-8 and -9 activities in type 2 diabetic subjects: A marker of incipient diabetic nephropathy? Clin Biochem. 43(7-8):635-9.  
<http://www.ncbi.nlm.nih.gov/pubmed/20843171>

#### **Abstract**

Matrix metalloproteinases (MMPs) may play a pathophysiological role in the development of diabetic nephropathy (DN). We hypothesized that urinary MMP activity in patients with type 2 diabetes mellitus (T2DM) is related to a decline in renal function. We determined MMP-2, -8 and -9 activity in 24-h urine collections in relation to risk factors for DN in T2DM patients with (UA, n=27) and without albuminuria (NA, n=48) and controls (CO, n=28). MMP-8 and -9 levels were highest in UA patients ( $P < 0.01$ ). Of UA patients, 93% had at least one MMP increased, compared to 78% of NA patients and 46% of CO ( $P = 0.001$ ). Age, diabetes duration, BMI, systolic blood pressure, fasting plasma glucose, HbA1c and renal function were determinants of MMP-8 and -9 ( $P < 0.05$ ). In summary, MMP-8 and -9 are highest in T2DM UA patients. MMP-9, showed the strongest associations with clinical parameters related to DN.