

Proteomic and bioinformatic discovery of biomarkers for diabetic nephropathy

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Abstract

Diabetes is associated with numerous metabolic and vascular risk factors that contribute to a high rate of micro-vascular and macro-vascular disorders leading to mortality and morbidity from diabetic complications. In this case, the major cause of death in overall diabetic patients results from diabetic nephropathy (DN) or renal failure. The risk factors and mechanisms that correspond to the development of DN are not fully understood and so far, no specific and sufficient diagnostic biomarkers are currently available other than micro- or macroalbuminuria. Therefore, this review describes current and novel protein biomarkers in the context of DN as well as probable proteins biomarkers associated with pathological processes for the early stage of DN via proteomics data together with bioinformatics. In addition, the mechanisms involved in early development of diabetic vascular disorders and complications resulting from glucose induced oxidative stress will also be explored.

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