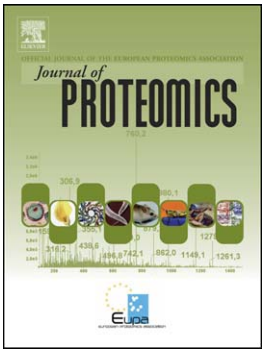

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Diabetic retinopathy: proteomic approaches to help the differential diagnosis and to understand the underlying molecular mechanisms

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Diabetes, diabetic retinopathy

Diabetes Mellitus (DM) has become the epidemic of the 21st century, the current worldwide prevalence of the disease is 2-6 % [1]. DM is described as a metabolic disorder of multiple etiology, characterized by chronic hyperglycemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both [2]. Insufficient insulin action arises either due to the damage of the producing pancreatic cells (insulin deficiency), or because the insulin produced cannot work properly (insulin resistance), or due to the two mechanisms together. DM is defined by the World Health Organization (WHO) as a fasting venous plasma glucose concentration of equal to or greater than 7.0 mmol/L or venous plasma concentration of equal or greater than 11.1 mmol/L, 2 hours after oral intake of 75 g glucose [3].

The main problem with DM is the occurrence of metabolic, vascular and neurological complications [4,5]. The effects of the disease include long–term damage, dysfunction and failure of various organs [6]. Early detection and treatment of the disease can decrease the risk of developing complications. Keeping the blood sugar level close to normal can dramatically reduce the risk of several complications.