

Noninvasive Analytical Detection of Biomarkers and Metabolites for Diabetes Diagnosis

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Diabetes mellitus (DM) is a ubiquitous disease affecting hundreds of millions across the globe. DM's increasing prevalence in all demographics, cost of treatment, and ambiguous manifestation make it an immediate and pressing concern. In the face of massive interpersonal variability, diagnosing the early expressions of the illness without expensive, invasive procedures is paramount. Recently, promising methods have demonstrated noninvasive analytical detection of protein biomarkers and metabolites linked to DM. Through urine, saliva, and breath analysis, aspects of DM have been accurately characterized via chromatography, immunoassays, statistical means, and metal oxide sensors.