

Urine - The next generation early disease biomarker source

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How to find the early sensitive biomarker is the most important question for medicine. Biomarker is the measurable change associated with the disease. Without homeostatic control, urine accumulates many early changes therefore theoretically is a better biomarker source than blood. Disease animal models were used to limit the confounding factors to minimum. Early candidate biomarkers were found in many disease models including type2 diabetes, lung fibrosis, liver fibrosis, chronic pancreatitis, chronic obstructive pulmonary disease, multiple sclerosis, myocarditis, subcutaneous cancer

model, bacterial meningitis, astrocytoma cancer model, patient derived xenograph model, Alzheimer disease etc. Relatively significant percentage of those candidate biomarkers had been reported to related to the disease. And many early biomarkers appeared earlier than clinical symptom, than MRI imaging, than significant pathological changes. Preservation of urine samples on membrane will also be discussed. This simple and economical method will greatly speed up the urinary biomarker discovery and validation.

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