

A system for detecting biological molecule and method of using the same.

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ABSTRACT

The present invention provides a rapid and efficient detection system and method of using the same. Particularly, the present invention relates to a system which detects biomolecules in biological samples in very low concentration. Specifically, system of the present invention is long emissive Near Infra-Red (NIR) fluorescent turn-on dyes-based point of care testing system for precise quantification of biomolecules in biological samples.

KEY APPLICATION AREAS

- 1.Clinical diagnostics: Quantitative estimation of albumin in biological samples.
- 2.Renal health monitoring: Measurement of albumin in urine for kidney-related assessment.
- 3.Point-of-care diagnostics: Development of compact and user-friendly albumin testing devices.
- 4.Medical laboratories: Automated albumin analysis in blood and urine samples.
- 5.Portable healthcare: Potential use in decentralized or resource-limited diagnostic settings.

POTENTIAL USE

- 1.Measurement of urinary albumin for assessment and monitoring of kidney-related conditions.
- 2.Automated quantitative estimation of albumin in blood/urine samples.
- 3.Compact device for rapid albumin measurement near the patient.
- 4.Screening of patients requiring albumin/urinary albumin assessment.
- 5.Portable albumin-testing platform where centralized laboratory facilities are limited.
- 6.Integration of the optical fluorescence detection module into biochemical analyzers.
- 7.Quantitative albumin measurement in biological samples for biomedical research.
- 8.Computer-assisted concentration estimation using photodetector signals, calibration data and a display output.