

**UR-INE THE CLEAR: DETECTING LYME DISEASE WITH PRECISION AND EASE**

**Advanced proteomic methods detect *Borrelia* peptides in human urine, providing a direct and non-invasive approach to diagnose Lyme disease. This technology leverages affinity capture and mass spectrometry (Mass Spec.) to overcome the challenges of low analyte concentration and pathogen diversity, ensuring accurate and early detection.**

**Key Features**

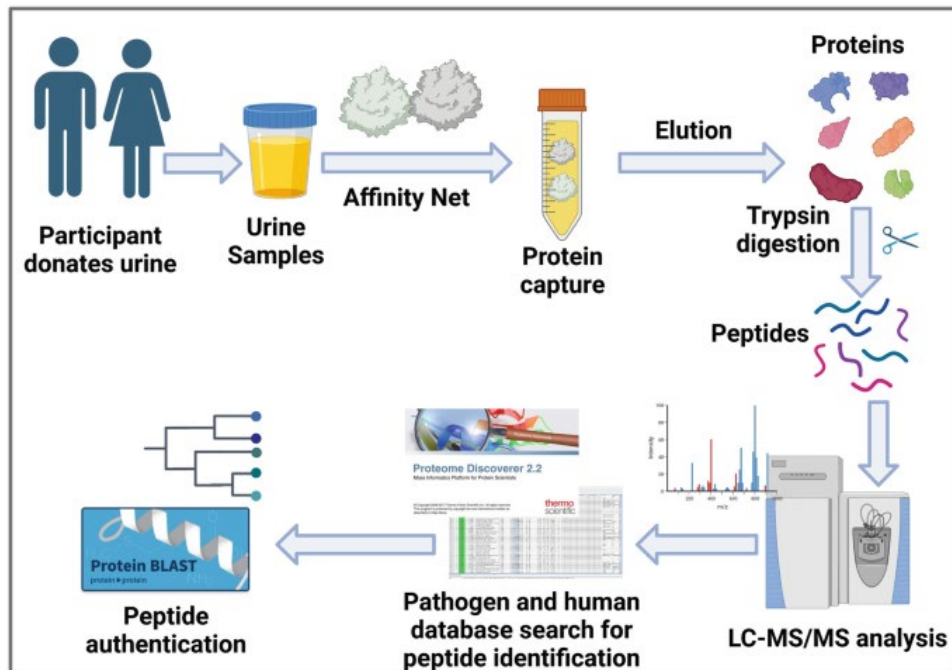
**Affinity Capture:** Utilizes a custom-designed affinity net to isolate and concentrate *Borrelia* peptides from urine samples, ensuring a thousand-fold increase in detection sensitivity

**Mass Spec. Analysis:** Employs liquid chromatography-tandem mass spec. (LC-MS/MS) for precise identification of *Borrelia* peptides, even at extremely low concentrations

**Bioinformatics Pipeline:** Implements a robust bioinformatics algorithm to authenticate peptides specific to *Borrelia*, reducing false positives and improving diagnostic accuracy

**Non-Invasive and Patient-Friendly:** Collects data from urine, eliminating the need for invasive procedures while providing reliable and consistent diagnostic results

**Scalable for Multiple Pathogens:** This methodology can be extended to detect other tick-borne pathogens, enhancing its utility across various vector-borne disease



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