

Interview with an EMSL researcher:

Kim Hixson

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Hi. My name is Kim Hixson, and I am a senior research scientist. I work in the United States Department of Energy's Environmental Molecular Sciences Laboratory.

Kim Hixson will present her poster "Ultra Rapid Pressure Digestion and Label-Free Quantitative Proteomics of Yersinia Infected Mice Tissues" at the ASMS Conference, May 31-June 4

The goals of this research were to identify important protein biomarkers associated with the host response, meaning the response of the mice, when they were infected with different strains of *Yersinia*. *Yersinia pestis*, for example, is the bacterial agent responsible for what we know as plague.

In order to identify these proteins, we first have to digest them — using other enzymes — into smaller peptides, and then we can analyze them via liquid chromatography/mass spectrometry.

In order to do that, like I said, we have to digest these proteins. This process usually takes a matter of hours, if not days. But, using newly developed capabilities and methodologies that were developed in the Environmental Molecular Sciences Laboratory, we have developed a method of an ultra rapid digestion that can take place in a matter of 2 minutes. So, we implemented this [method] on this real life study on these infected tissues.

This research was important because it enabled us to identify biomarkers very quickly, and the discovery of these biomarkers could aid in creating better therapeutics for bacterial infections.

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