

An advance in solving the mysterious machine-workers' disease

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Scientists are reporting an advance toward solving a mysterious machine-workers' disease. Credit: USMilitary.com

Scientists in Ohio are reporting a long-awaited advance toward making the workplace safer for more than one million machinists in the United States who may be exposed to disease-causing bacteria in contaminated metalworking fluids. Those fluids become airborne during machining of metal parts. The study appears in the current edition of ACS' monthly *Journal of Proteome Research*.

In the report, Jagjit S. Yadav and colleagues note that a [bacterium](#) called *Mycobacterium immunogenum* (*M. immunogenum*) was first identified

in 2000 as the potential cause of a mysterious disease that had been occurring among machinists. The illness, called hypersensitivity pneumonitis (HP), is an inflammation of the lung resulting from the body's immune reaction to bacteria, mold, and other [airborne particles](#).

At HP outbreak sites, *M. immunogenum* is known to colonize metalworking fluids, used to cool the cutting tools that grind metals. Workers inhale the infected particles as they spray into the air from drills and other cutting tools. HP's symptoms include fever, cough, shortness of breath and chills.

The scientists describe their first-of-its kind identification of 33 proteins in *M. immunogenum* that seem to be involved in triggering the [immune response](#) likely responsible for HP. Those proteins could serve as the basis for a test to identify workplace contamination with *M. immunogenum*, and targets for developing medications or vaccines to treat and prevent the condition, the study says.

More information: “Immunoproteomic Identification of Secretory and Subcellular Protein Antigens and Functional Evaluation of the Secretome Fraction of *Mycobacterium immunogenum*, a Newly Recognized Species of the *Mycobacterium chelonae* — *Mycobacterium abscessus* Group”; *Proteome Research*

Source: American Chemical Society ([news](#) : [web](#))

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