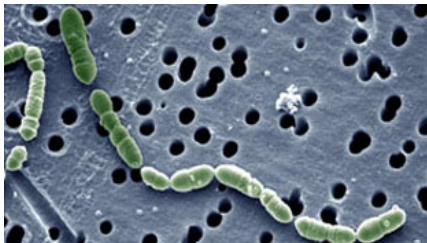


Scientists map the partial proteome of a common lactic acid bacterium (*Oenococcus oeni*).

By Abby Olena | February 2017

The Scientist - The Nutshell



WIKIMEDIA, GOT

In the ongoing quest to understand the influence of [microbes](#) on the taste, aroma, and mouthfeel of wine, researchers have taken another step forward. A team of investigators from the Spanish National Research Council and the University of Foggia in Italy has partially mapped the proteome of a bacterium (*Oenococcus oeni*) involved in the production of virtually all red wine. Their work was published in [Open Biology](#) today (February 26).

O. oeni is the bacterium responsible for malolactic acid fermentation or deacidification following fermentation of most red wines and some white and

sparkling wines. In order to better understand the microbe's metabolic pathways, the researchers standardized a method to extract proteins from *O. oeni* and characterized its membrane and cytosolic proteome. They identified 152 unique proteins, which was probably about 10 percent of the total proteome. The investigators found enzymes involved in metabolic pathways that can lead to changes in levels of nutty and buttery flavors in wine.

"The harsh wine environment represents a challenge to the survival of *O. oeni* and can strongly affect the successful outcome of the vinification," the authors wrote in their paper. "Therefore, a better understanding of the molecular mechanisms related to the stress adaptation and technical performance of *O. oeni* is crucial for the characterization and selection of strains for industrial purposes."

[wine](#), [microbiology](#), [fermentation](#) and [bacteria](#)