

Scientists honor Frank Zappa, naming human zit-causing bacterium now infecting vineyards

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In a striking case of pathogen transfer involving the bacterium responsible for human acne, *P. acnes*, authors Campisano, et. al., report in the journal *Molecular Biology and Evolution* on a new type of *P. acnes* which exploits grapevines, dubbing it *P. acnes* type Zappae. Th

ey named the bacterium after the Italian term "zappa," meaning, hoe, as well as a tribute to eclectic composer Frank Zappa, who once wrote of "sand-blasted zits" in one of his most famous satirical songs, "Jewish Princess," from his controversial '79 "Sheik Yerbouti" album. "This bacteria is so unconventional in its behavior, and its new habitat is so unexpected that we thought of Frank Zappa. Indeed, at the time we were discovering it, we were both playing a Zappa album in our cars" say authors Andrea Campisano and Omar Rota-Stabelli.

The bacterium was first discovered by the research team via a 16S rDNA gene-based microbiome analysis gathered from the stems of plants sampled from multiple sites throughout Northeast Italy.

The bacterium colonizes bark tissues, and the pith, where the bacterium can localize intracellularly. Thus, compared to being a bane to millions of teenage faces, *P. Zappae* has adapted to an entirely new intracellular ecological niche in grapevines.

The research team also investigated the evolutionary history of *P.*

Zappae by using two marker genes, *recA* and *tly*. Remarkably, their results support a human origin for the *P. Zappae* [bacterium](#). Their data also suggests a loss of function of *recA*, a protein essential for the repair of DNA, which means that *P. Zappae* must rely on its grapevine host for survival. Finally, they estimate the emergence of *P. Zappae* around 7,000 years ago, an age highly compatible with the first domestication of the grapevine and a time when human intensive practices, such as the grafting and pruning of vines, may have led to the transfer to its new host.

This is the first evidence ever of human to plant obligate transfer and gives new perspective of bacteria host transfer between humans and domesticated plants. The significance of *P. Zappae* and its influence on plant growth and health will be continued in future studies.

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