

## XIX CONGRESO DE LA SOCIEDAD ARGENTINA DE MICROBIOLOGÍA GENERAL

22 al 25 de octubre del 2024

Centro cultural y Pabellón Argentina de la Universidad Nacional de Córdoba, Córdoba, ARGENTINA.



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## **A 10-YEAR ODYSSEY IN ENGINEERING THE METABOLISM OF PSEUDOMONAS**

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The soil bacterium *Pseudomonas putida* thrives as a colonizer of plant roots and often inhabits environments polluted with various chemicals. Due to a combination of historical contingencies and inherent qualities, *P. putida* strain KT2440 has long been recognized as a model environmental microorganism suitable for recombinant DNA technologies and capable of degrading chemical waste. This presentation will cover our efforts to engineer the metabolism of *P. putida* using advanced synthetic biology approaches. The main value and potential of this species lie not only in its ability to host pathways from other organisms but also in supporting entirely artificial routes (neo-metabolism) for producing complex, novel molecules. Several examples will be presented to demonstrate the utility of *P. putida* as a preferred platform for the sustainable production of fine and bulk chemicals. Additionally, the potential of *P. putida* to extend its native biochemistry beyond current boundaries will be explored, identifying key research bottlenecks that should be tackled in the future.

Palabras clave: palabras\_clave