



# Survival mechanisms and adaptive evolution of *Pseudomonas aeruginosa* in the urinary tract

Caroline Duval

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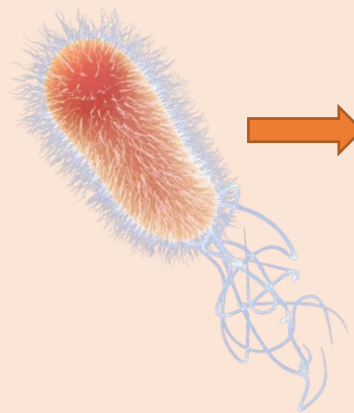
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# Survival mechanisms and adaptive evolution of *Pseudomonas aeruginosa* in the urinary tract

Caroline Duval, Univ Rouen Normandie, UNICAEN, INSERM, DYNAMICURE UMR 1311 F-76000 Rouen, France

## A. Introduction



*Pseudomonas aeruginosa* (*P. aeruginosa*)

Gram-negative bacillus, ubiquitous

6.3 Mb genome and ≈ 5600 genes

8% of regulatory genes

→ High capacity to adapt to its environment

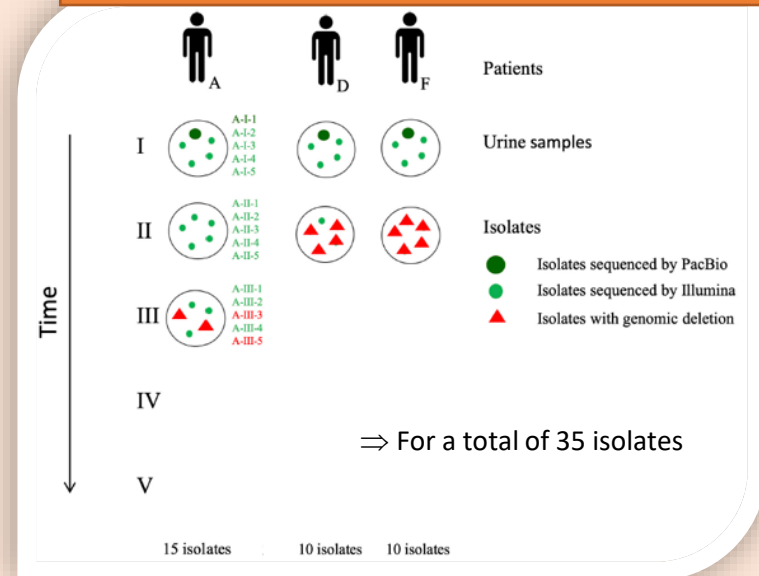
Mainly responsible for urinary tract infections and especially recurrent infections due to biofilm and multiresistance to antibiotics

## Objectives of the study

To further characterize the mechanisms of urinary **survival** and **adaptation** in order to better understand the pathogenesis of the recurrent urinary tract infections.

- ❑ **Phenotypic** characterization of sequential urinary clinical isolates of *P. aeruginosa*.
- ❑ **Post-genomic** study of the adaptive evolution of *P. aeruginosa* in the urinary tract.

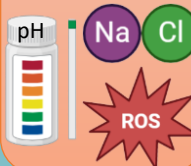
## Flowchart of the *P. aeruginosa* isolates studied



## B. Methods

### I. Phenotypic characterization

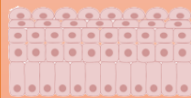
Response to various stresses



Long-term and intracellular survival



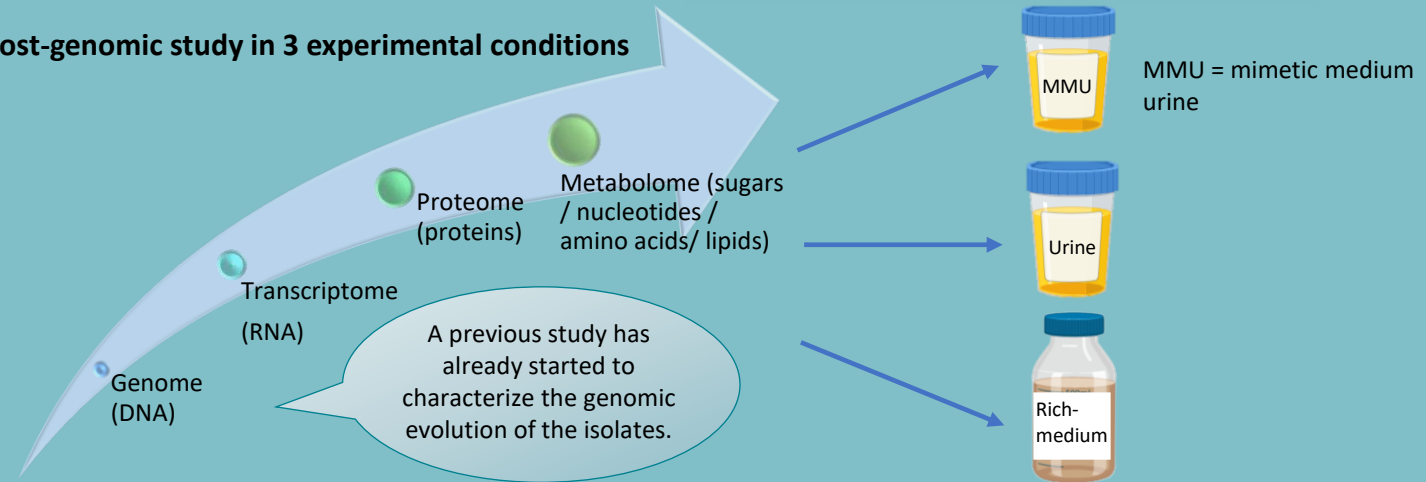
Ability to adhere to urothelial cells



Virulence in larval infection model (*Galleria mellonella*)



### II. Post-genomic study in 3 experimental conditions





# Thank you !

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