

Pseudomonas Aeruginosa

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Pseudomonas Aeruginosa Latest News

Recently, a team of researchers, led by scientists from the Helmholtz Centre for Infection Research in Germany, has reported that a gene in the bacterium *Pseudomonas aeruginosa* shows bistable expression.

About Pseudomonas Aeruginosa

- It is a **gram-negative, aerobic, non-spore** forming rod shaped bacterium.
- It is capable of causing a variety of infections in both **immunocompetent and immunocompromised hosts**.
- It is **commonly found in the environment**, particularly in freshwater.
- It can **cause** a wide **array of community-acquired infections** like folliculitis, puncture wounds leading to osteomyelitis, pneumonia, otitis externa, and many others.
- It is **commonly an opportunistic pathogen** and is also an important cause of nosocomial infections like ventilator-associated pneumonia, catheter-associated urinary tract infections, and others.
- Most burn victims succumb to secondary *P. aeruginosa* infections.

- It is a **major cause of keratitis**, an eye infection, and also infects **urinary catheters**.

What is a Bistable Expression in Bacteria?

- Two bacterial cells with identical genomes — and even from the same colony — can be quite different from each other.
- One cell might **express a particular gene at a high level** while the other might express it at a low level or not at all.
- Each bacterium goes on to transmit its expression level to its offspring in a process called **epigenetic inheritance**.
- Such variations among identical cells and **organisms are called bistability**.
- Bistability might be a survival strategy that single-celled organisms use to **adapt to fluctuating environmental conditions**.

Source: **TH**

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