



## FACT SHEET

### *Ralstonia pickettii*

#### Description:

- *Ralstonia pickettii* (*R. pickettii*) is a Gram-negative, non-motile, rod-shaped, beta proteobacteria, found in soils, rivers and lakes.
- Previously included in the genus *Pseudomonas*, *Ralstonia* is named after the American bacteriologist Ericka Ralston. She identified 20 strains of *Pseudomonas* and gave them the name of *Pseudomonas pickettii* after the person from whom she had received the strains. The genus *Ralstonia* was proposed in 1995.

#### Interesting Facts:

- *R. pickettii* is an oligotrophic organism capable of surviving in areas with a low concentration of nutrients and can withstand metal concentrations such as copper.
- This organism also has the ability to pass through 0.45 and 0.2 mm filters such as those which are used to sterilise medical products.
- *R. pickettii* is a part of the flora in the mouth and the upper respiratory tract.
- Accurate identification of *R. pickettii* can be difficult; it may be misidentified as other closely related species.
- *R. pickettii* has the ability to survive in hospital disinfectants including chlorhexidine 7 and ethacridine lactate (acrinol).
- *R. pickettii* has been found in pharmaceutical and medical solutions, which is a concern to manufacturers of these types of products.

#### Infection:

- This bacterium can seriously affect humans with reduced immune function; it can have a significant impact on patients with cystic fibrosis and Crohn's disease.
- Several outbreaks have been reported in hospitals, the majority caused by contaminated water, saline and 'sterile' drugs. This is usually owing to filters being used as a 'sterilisation' step whereby *R. pickettii* can by-pass.
- This organism can cause respiratory infections, particularly in immunocompromised or cystic fibrosis patients, as well as bacteraemia from contaminated solutions such as distilled water, water for injection and aqueous chlorhexidine solutions.

#### In the Lab / at Wickham Laboratories Ltd

- *R. pickettii* normally present as domed, beige colonies on Tryptone Soya Agar (TSA). The identity of the bacterium can be formalised using identification techniques such as MALDI-ToF (Matrix Assisted Laser Desorption Ionisation-Time of Flight).
- *R. pickettii* will grow on TSA readily and its optimum growth temperature is between 30-37°C. However, being a water-borne organism, it can survive at lower temperatures in a protective biofilm.
- *R. pickettii* is typically seen in the laboratory environment from environmental monitoring of purified water used in manufacturing processes so it should be monitored by manufacturers in their environmental monitoring programmes. This ensures that sanitisation and filtration processes in their water systems are capable of eliminating *R. pickettii* and preventing this microorganism from entering the manufacturing process.
- In addition to these sanitisation and filtration processes, manufacturers should trend data from routine environmental monitoring on the bacterial counts seen as well as set action and alert limits to ensure they act quickly to prevent issues before they escalate.
- Care should be taken to ensure that resistance to certain disinfectants or sanitisers is not built up by *R. pickettii*, particularly due to the protective qualities of the biofilm it uses. Regular appraisal and rotation of disinfectant or sanitisation agents are important when reviewing environmental monitoring results.



**MALDI-ToF**

**Rapid Microbial Identification**