CERIS Civil Engineering Research and Innovation for Sustainability

# LEGIOFILMS – Understanding the Role of Biofilm Architecture in Legionella Colonization and Risk of Detachment in hospital networks using an Integrated Monitoring Approach

**Summary**

Legiofilms, is an interdisciplinary project covering the engineering component of hot water systems (e.g. hydrodynamics), the biofilm dynamics and architecture and the microbiology (culture and molecular) associated with Legionella detection.

LegioFilms aims to enhance current Legionella prevention real-field practices, by emphasizing the role of biofilms as Legionella ecological niches, through an integrated monitoring model. This model combines continuous and discrete monitoring, of both biofilm and water and considers the screening of Legionella and protozoa in these two matrices. This project follows a bottom-up innovative approach to deepen the fundamental understanding between Legionella and different architecture biofilms and transform it into a tangible integrated monitoring model that will be validated in hot water networks from hospitals.

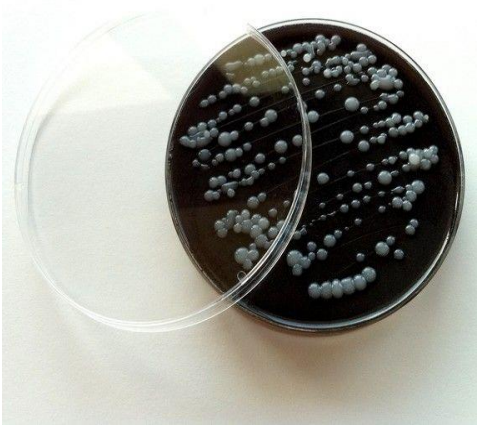

*Figure 1. Bacteria Legionella growing in solid culture media.*

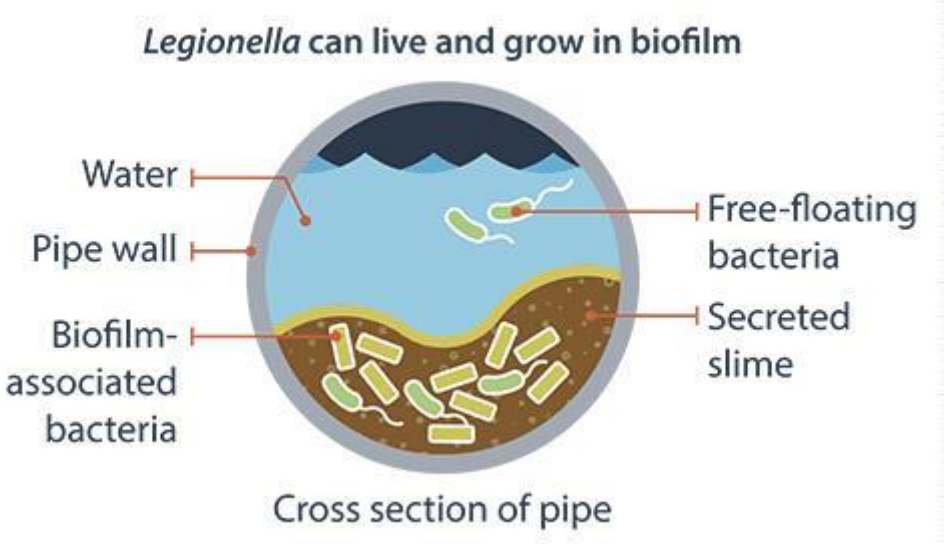


*Figure 2. Cross section of pipe and Legionella presence in Biofilms.*

**Project Reference**

2022.03523.PTDC

**Leading Institution**

FEUP – Faculdade de Engenharia da Universidade do Porto (Portugal)

**Partners**

IST – Instituto Superior Técnico (Portugal)

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2023-2026

**Total**

229 427.42€

**CERIS**

25 000.00€

**Project Website**

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