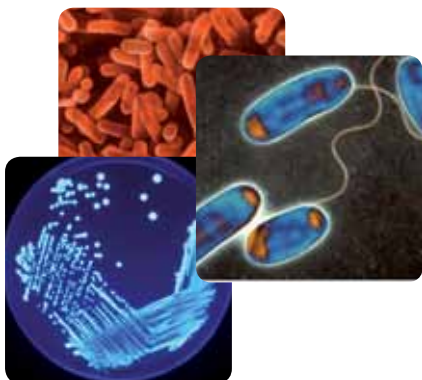
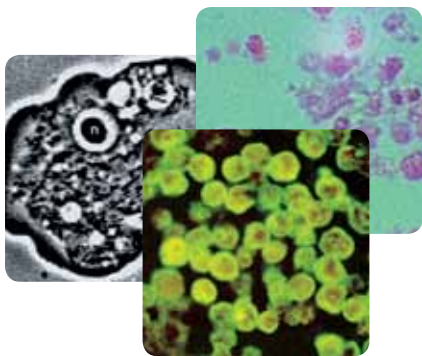


# PATHOGENS CONTROL MANAGEMENT



## THE INVISIBLE THREAT IN WATER

Industrial cooling water systems and large air conditioning systems are common sources for the presence of pathogenic organisms like *Legionella* and *Naegleria*. Both are thermophilic organisms and prefer water at temperatures between 25° C and 60°C. Both pathogens can be found in warm bodies of fresh water, such as ponds, lakes and rivers. They are also found in soil and sludge, near warm water discharges of industrial plants, and in stagnant ponds. Humans can be infected by these organisms via inhalation of aerosols containing the pathogens, and for *Naegleria* also by penetration of infected water under pressure through the nose.

> ***Naegleria fowleri*** is a free-living single celled amoeba that can invade and attack the human nervous system and cause a serious form of meningitis (meningoencephalitis), such an infection will nearly always result in the death of the victim.

> ***Legionella pneumophila*** is a human pathogenic bacterium causing Pontiac fever, legionellosis or Legionnaires' disease. This is a serious form of pneumonia, which can be fatal if not treated fast and correctly.

## PREVENTION BETTER THAN CURE

Preventing and controlling the growth of *Legionella* and *Naegleria* in water bodies must be done by:

- > Maintenance guidelines
- > Control management plans
- > Sufficient water analysis
- > Creating emergency plans including disinfection guidelines

Within Laborelec many years of experience is gathered in all these areas.



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## RISK MANAGEMENT

- > Laborelec offers expert recommendations to prevent the development of pathogens and reduce the risks for infections
- > An extensive and objective risk analysis can be performed based on the specific installations and an appropriate management plan can be realized
- > A monitoring plan can be established and representative samples can be taken and analysed in our specialised laboratory
- > If necessary the needed measures to lower the immanent risks can be given.

## SPECIALIZED PATHOGEN LABORATORY

When the presence of pathogens is suspected or when the infection risk is high, water analysis must be carried out.

Laborelec disposes of a fully equipped ultra modern laboratory for pathogen detection through different analyzing methods.

Analysis of *Naegleria fowleri*:

- Culture
- ELISA (Enzyme-Linked Immunosorbent Assay)
- PCR (Polymerase Chain Reaction)

*Legionella* species and *Legionella pneumophila*:

- PCR
- Culture (in collaboration with or under subcontracting with an accredited laboratory)

Analyses can be performed on water and sludge samples.

Using the PCR technology makes it able to detect the presence of the pathogens in water within 48 hours. This makes it possible to react faster on possible infections, reduce risks of a fast multiplication of the pathogens in the water.

## CONTACT:

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