rqmicro
rapid quantitative microbiology

Legionella Kits

Speed

- Time to result less than 2 hours

Specificity

- High specificity and sensitivity
- Detection of viable but non-culturable cells
- Discrimination of dead cells

Application

- Aqueous samples
- Compatible with flow cytometry, cultivation, PCR, microscopy, etc.

Legionella Facts

Class	Gammaproteobacteria
Genus	*Legionella* – with about 70 species
About *L.p.* SG1	15 substrains
Morphology	Rod-shaped, 0.3- 0.9 µm wide and approx. 2 µm long, gram-negative, non-spore-forming
Natural habitats	Freshwater environments and soil, facultative intracellular parasite, invades and replicates inside amoeba
Artificial habitats	Grows and spreads in human-made water systems, forms biofilm in pipes and containers
Infectious agent of	Pontiac fever and Legionnaire's disease, the latter with a mortality rate of ≈ 10%
Transmission	Inhalation of aerosol containing bacteria; *Legionella* can spread at least 6 km by air from the source
Defense mechanism	Endures harsh conditions in a viable but non-culturable state (VBNC)
Growth conditions	Multiplies between 25°C and 42°C under aerobic conditions

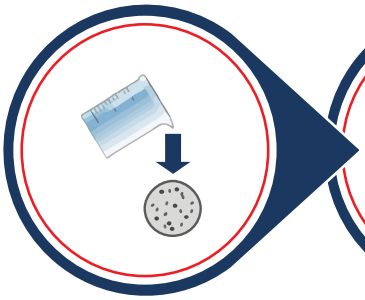
In **96.3%** of Legionnaire's disease cases, *Legionella pneumophila* was identified as infectious agent.

In **83%** of these cases the infection was associated with ***Legionella pneumophila*** **serogroup 1.***

*Source: Legionnaires' Disease in Europe, 2011 To 2015, Julien Beauté- on behalf of the European Legionnaires' Disease Surveillance Network, http://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2017.22.27.30566

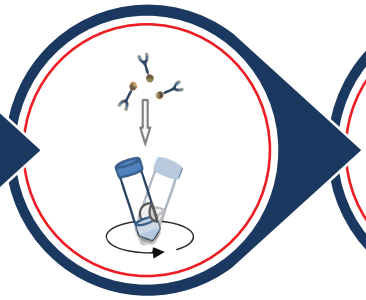
rqmicro Method

Concentration



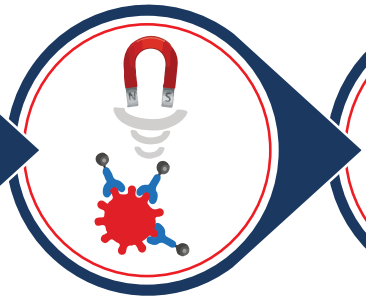
Filtration of sample and resuspension in a small volume of buffer.

Reaction



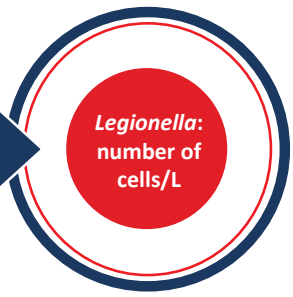
Incubation with reagents.

Purification



Immunomagnetic separation (IMS) of target cells and elimination of > 95% of the competing flora.

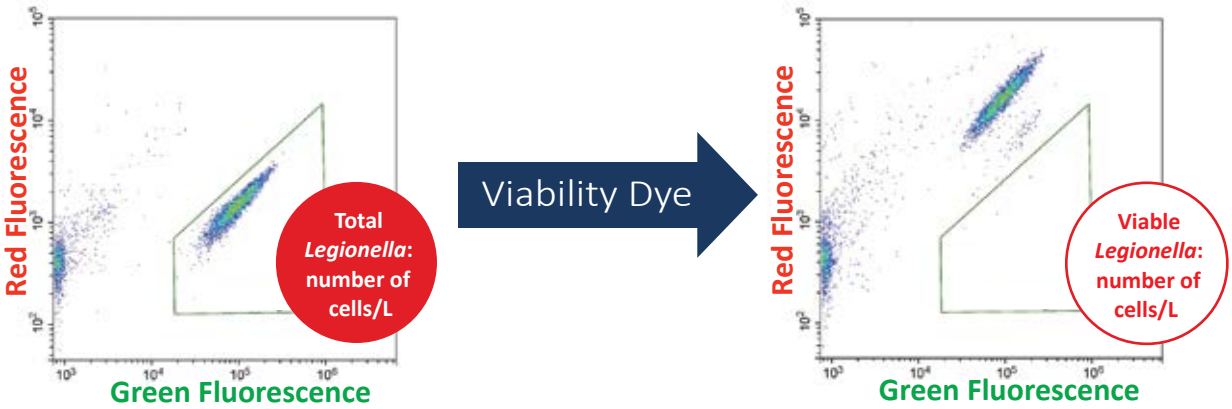
Quantification



Quantification by flow cytometry, cultivation, fluorescence microscopy, PCR, etc.

rqmicro Method & Flow Cytometry

Time to Result less than 2 Hours



Single cell analysis by flow cytometry allows for fast quantification of target cells. By adding viability dye, a distinct population of dead cells moves out of the target gate, which allows quantifying the viable cell population. In contrast to the cultivation method also viable but non-culturable cells are detected, which minimizes the risk of false-negative results.

rqmicro Method & Cultivation on Agar Plates

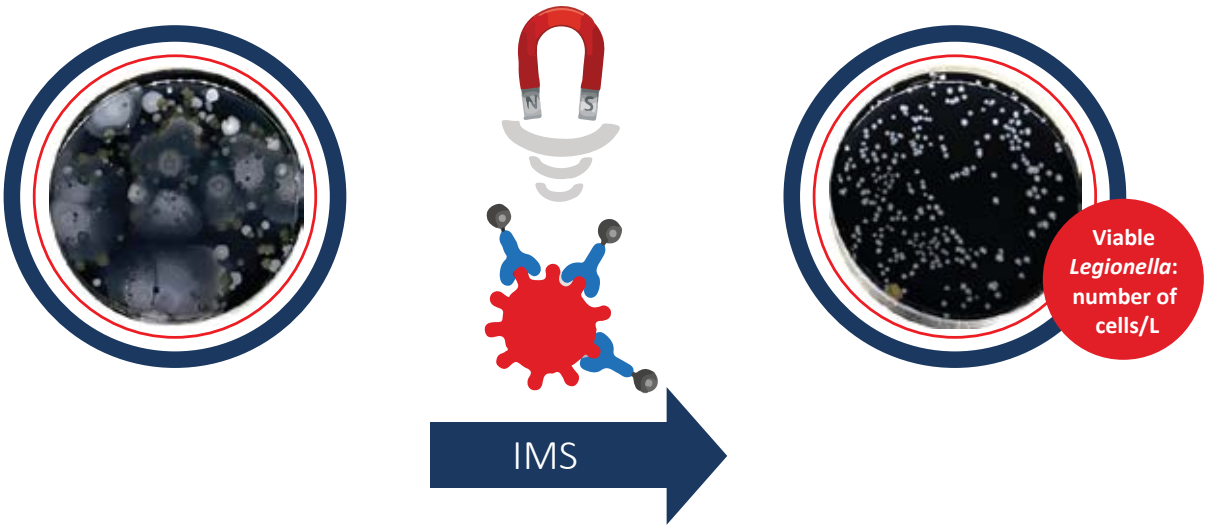
Elimination of Competing Flora

Without IMS: overgrown plate

Not evaluable

With IMS: single *L.p.* SG1 colonies

Clear results



Kits

Organism	Quantification Step	Purification Step*	Kit
L. pneumophila SG1	Flow Cytometry	CellStream	*L.p.* SG1 DETECT CellStream
		MIMS	*L.p.* SG1 DETECT MIMS
	Cultivation	CellStream	*L.p.* SG1 SEP CellStream
		MIMS	*L.p.* SG1 SEP MIMS
L. pneumophila	Flow Cytometry	CellStream	*L.p.* SG1-14 DETECT CellStream
		MIMS	*L.p.* SG1-14 DETECT MIMS
	Cultivation	CellStream	*L.p.* SG1-15 SEP CellStream
		MIMS	*L.p.* SG1-15 SEP MIMS

*CellStream: automated IMS; MIMS: manual IMS

Kits are available as **PLUS option** to meet the increased requirements for the precise and reliable analysis of complex aqueous matrices, e.g. industrial water or cooling tower water.

Our R&D team is constantly working on expanding our offer. To find out more about kits under development please check out our website: www.rqmicro.com

rqmicro products are successfully applied in the following areas:

- Service laboratories
- Healthcare
- Public facilities
- Water supply
- Industry and cooling towers

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