Learn how to isolate and purify *Legionella* from aqueous samples in less than two hours with the manual immunomagnetic separator (MIMS)

IMS combined with different methods of downstream analysis

Manual immunomagnetic separation (IMS) can be performed with the rqmicro MIMS instrument (manual immunomagnetic separator). It delivers purified and concentrated target cells ready for downstream analysis. Combined with the rqmicro *Legionella* SEPARATION kits, it provides a complete solution for sample preparation. The target cells are isolated from aqueous samples of different matrices by using antibody-coated magnetic particles. After IMS, the isolated and purified target cells are ready for subsequent analysis by cultivation on agar plates or PCR.

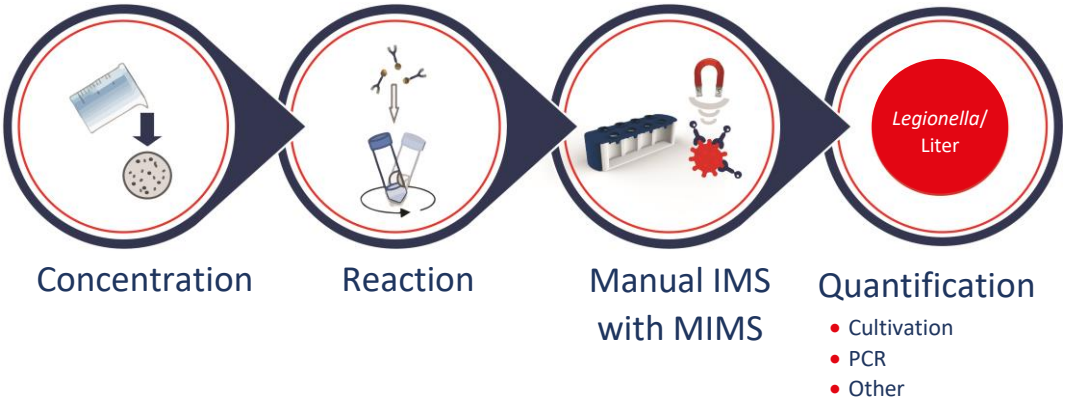


Figure 1: Sample preparation in less than two hours following a straightforward workflow.

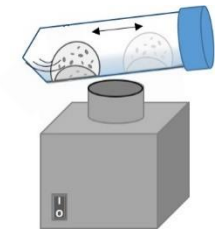
Protocol

Optional for samples with complex matrices/PLUS Kit: Prefiltration of the total sample volume using a 5 µm filter and collection of the filtrate in a sterile container.

1. Filtrate the desired amount of water with a standard filtration unit, using a 0.2 µm polycarbonate filter provided with the *Legionella* kits.

2. Remove the filter from the filtration unit and place it into a 50 mL tube containing 3 mL of buffer 1 (incubation buffer). The filter should lie flat on the inner wall of the tube.

3. Vortex the 50 mL tube for 60 s in a horizontal position, thereby resuspending the bacterial cells in buffer 1.



4. Transfer the 3 mL suspensions in 5 mL tubes.

5. Gently mix the suspension containing the magnetic particles and add 30 µL to each sample.

6. Incubate the samples for 30 min at RT with gentle shaking or rocking. Protection from light is recommended but not necessary.

7. Transfer the tubes onto the magnet rack. Incubate for 5 min to immobilize the magnetic particles. Then carefully remove the supernatant with a pipette. Take the tubes off the magnet rack and add 3 mL of buffer 2. Mix the samples thoroughly by vortexing and ensure that all magnetic particles are in suspension. Repeat this step.

8. Transfer the tubes onto the magnet rack. Incubate for 5 min to immobilize the magnetic particles. Then carefully remove the supernatant with a pipette. Take the tubes off the magnet rack and add 1 mL of buffer 2 for the final resuspension. Vortex.

9. The samples are now ready for downstream analysis, i.e. cultivation on agar plates (GVPC), PCR, etc.

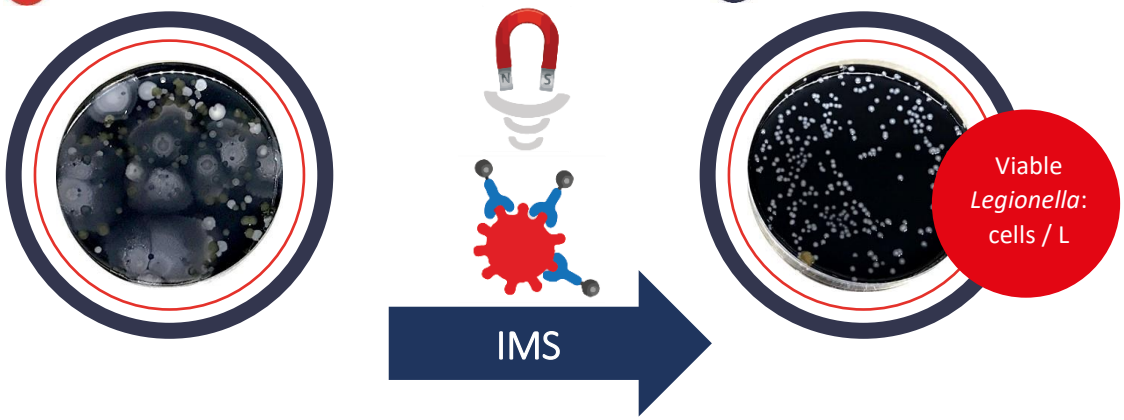
Results rqmicro method & cultivation on agar plates

Without IMS: overgrown plate

Not evaluable

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

Clear results



Reagents: *Legionella pneumophila* SG1 SEPARATION Kit.

Instrument: MIMS

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