

CYTO-WATER

Project reference: 642356

Funded under: H2020-EU.3.5.4.

Integrated and portable image cytometer for rapid response to Legionella and Escherichia coli in industrial and environmental waters

From 2015-06-01 **to** 2018-06-01, ongoing project

Project details

Total cost: EUR 2 368 298,75	Topic(s): WATER-1a-2014 - First application and market replication
EU contribution: EUR 1 896 624,5	Call for proposal: H2020-WATER-2014-two-stage
Coordinated in: Spain	Funding scheme: IA - Innovation action

Objective

The proposed project will deploy for the first time a new imaging cytometer platform capable of detecting minute quantity of micro-organisms in industrial and environmental waters. The platform is based on the integration of proprietary technologies available to the consortium partners: an automatic water concentration cartridge combined with a microfluidic cell will provide an adequate sample to a newly designed fluorescence image cytometer whose readings will be recorded and processed using a proper software interface. It will be validated for quantifying Legionella and Escherichia coli (E. coli) population within 120 minutes from obtaining the sample, overcoming in this way the main disadvantage of traditional methods used in laboratories, i.e. long time-to results which can currently last up to 12 days in the case of Legionella and 1 day for E. coli. The targeted detection limit will be 10-100 cells/L and 5-20 cells/100 mL for Legionella and E.coli, respectively. Also, the new imaging cytometer will have a portable form, a size similar to a smart-phone, which will increase its versatility and widen the possibilities of onsite applications. The relevance of the project is clear when one thinks about the high risk of legionellosis in some specific industrial environments, such as cooling waters, evaporative condensers and air conditioning systems and the fact that E. coli is one of the faecal pollution index commonly analyzed for monitoring the presence of waterborne pathogens and hence the quality of bathing waters. From a market perspective, more than 7 million of Legionella analyses are performed annually in Europe while E. coli level is included in all bathing water regulations in different EU countries. CYTO-WATER clearly falls into HORIZON 2020 topic WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication and addresses Water Framework Directive (2000/60/EC) and in the Bathing Water Directive (2006/7/EC).

Coordinator

LABAQUA SA
Spain

Spain

EU contribution: EUR 455 796,25

Participants

MEM-TEQ VENTURES LIMITED
United Kingdom

United Kingdom

EU contribution: EUR 111 464,5

MICROTEC GESELLSCHAFT FUR MIKROTECHNOLOGIE MBH
Germany

Germany

EU contribution: EUR 239 750

BERTIN TECHNOLOGIES SAS
France

France

EU contribution: EUR 293 562,5

CETAQUA, CENTRO TECNOLOGICO DEL AGUA, FUNDACIÓN PRIVADA
Spain

Spain

EU contribution: EUR 371 351,25

FUNDACIO INSTITUT DE CIENCIES FOTONIQUES
Spain

Spain

EU contribution: EUR 424 700

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