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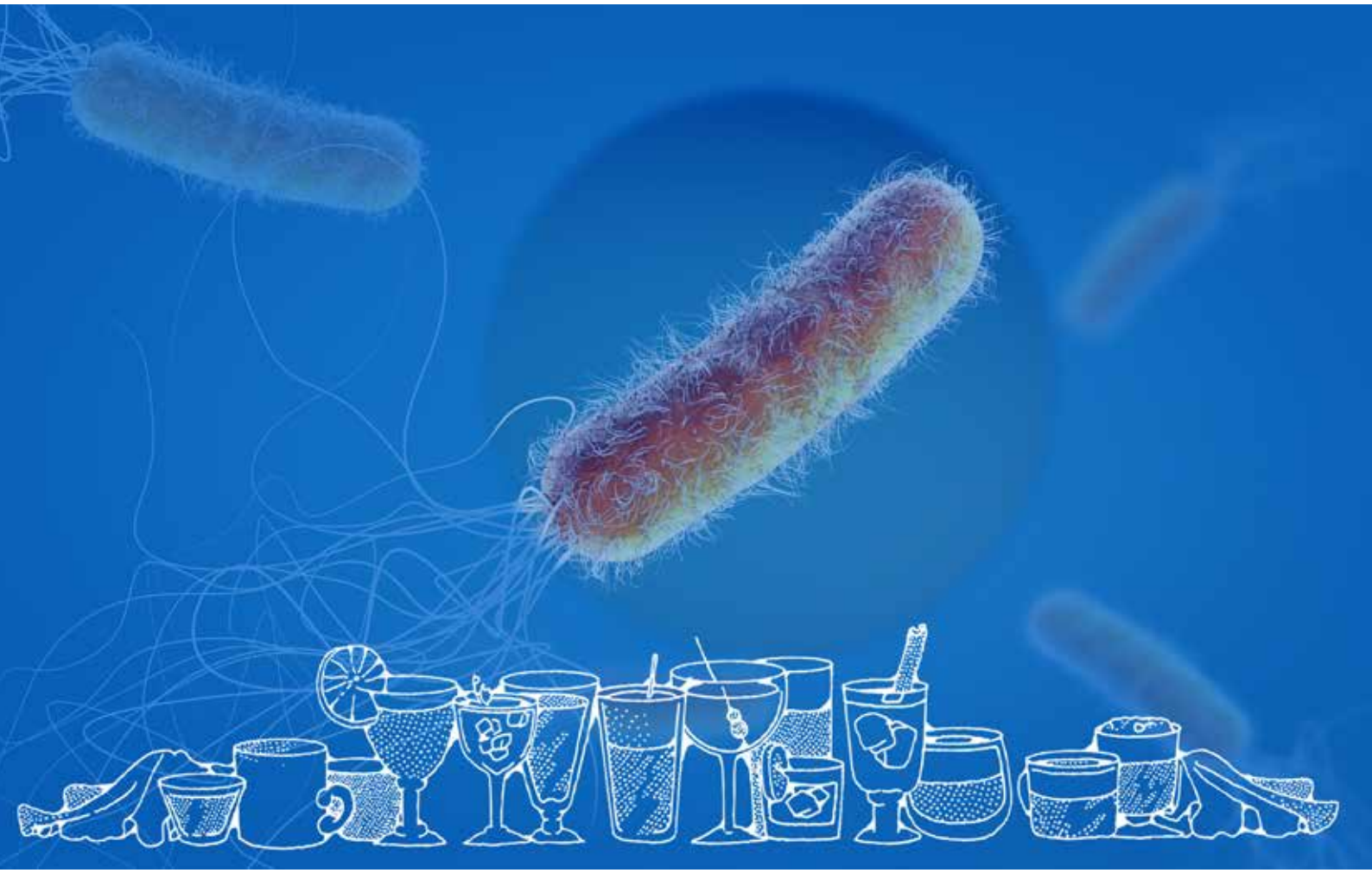
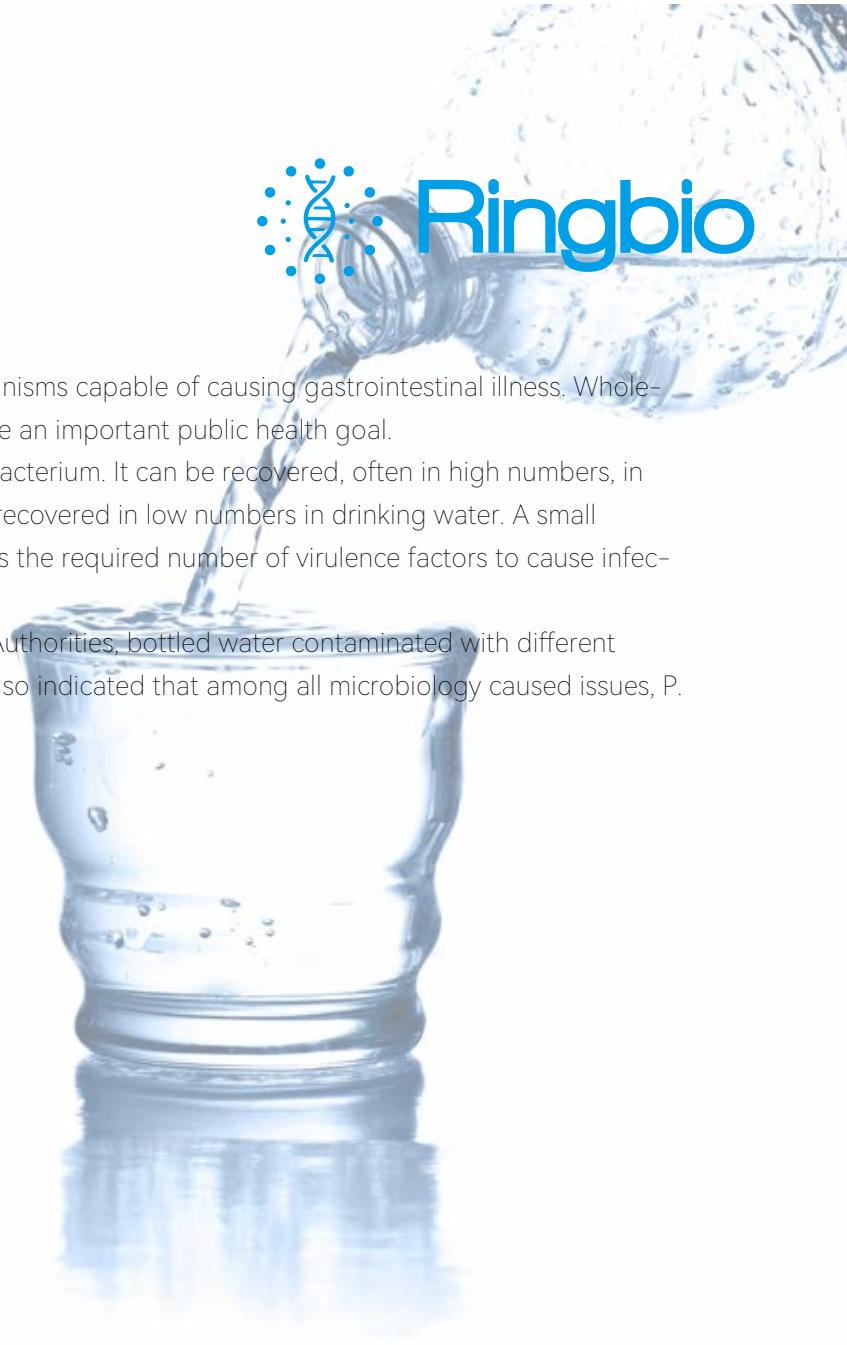
Rapid Detection of Pseudomonas aeruginosa in Water and Environment



Ring Biotechnology Co Ltd

Pseudomonas aeruginosa in water

Water can transmit a wide range of pathogenic microorganisms capable of causing gastrointestinal illness. Wholesome and microbiologically safe drinking water is therefore an important public health goal.
Pseudomonas aeruginosa is a ubiquitous environmental bacterium. It can be recovered, often in high numbers, in common food, especially vegetables. Moreover, it can be recovered in low numbers in drinking water. A small percentage of clones of Pseudomonas aeruginosa possess the required number of virulence factors to cause infection.
According to a scientific research done by the Irish Food Authorities, bottled water contaminated with different bacteria may lead to severe food safety issues. Statistics also indicated that among all microbiology caused issues, P. aeruginosa is the most significant problem.



Possible causes of the contamination

P. aeruginosa exisits widely in natural environment. Contamination of water source may cause the exisitence of this baterium in bottled water. Manufacture process with bad hygieine may also bring P. aeruginosa to final products. In certain cases, unclean packaging materials are also source of contamination. When bottled water is released to the market, it can also be contaminated.

International Standards and Regulations

In EU, China, Japan, strict requirement for P. aeruginosa in bottled water has been established. In 98/83/EC of EU, the maximum colony of P. aeruginosa is 0/250mL. In GB 19298 of China, the regulation is similar.

The current ISO standard for P. aeruginosa detection is ISO 16266 Water quality — Detection and enumeration of Pseudomonas aeruginosa — Method by membrane filtration, in which specifies a method for the isolation and enumeration of Pseudomonas aeruginosa in samples of bottled water by a membrane filtration technique.
According to this standard, water shall be filtered and the membrane used will be tested for P. aeruginosa in certain culture medium. The whole procedure is complicated due to the reagent and long incubation. In certain cases, rapid testing method of P. aeruginosa is also needed.

KangarooSci

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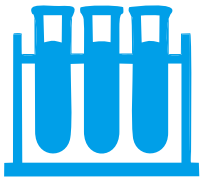
PA Count Plate

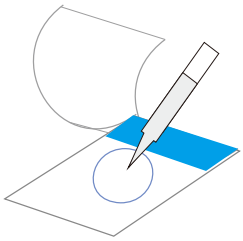
Product code	KGB002
Product name	Pseudomonas aeruginosa PA Count Plate
Unit size	4 tests / pack
Applied samples	Water, environment samples
Dilution buffer	Sterile saline or PBS
Sample preparation	0.45 μm filtration
Incubation	36℃±1℃, 24 - 30 h
Colony color	Yellow-green or blue-green
ISO standards	ISO 16266

Testing Procedure

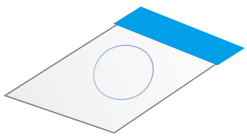
1. Water sample needs filter with 0.45 μm filter membrane.
2. The used membrane will be placed on the microbial count plate, then add 1mL sterile water.
3. Cover the plate and then spread the liquid inside the glue circle on the plate.
4. Incubate at 36℃±1℃ for 24 - 30 h.
5. Take out and count the yellow-green or blue-green colonies.



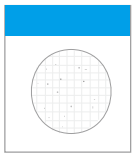
Sample Preparation



Sampling



Incubation



Enumeration

Contact Us

Ring Biotechnology Co Ltd

Add: Building 3, Zhongtongtai TechnoPark, No. 11, Kechuang 14th St, Beijing 100176, CHINA

Web: www.ringbio.com

Email: info@ringbio.com