

Frequently Asked Questions- AOC

Q: Are luminous bacteria dangerous? Do I need to be a trained microbiologist in order to be able to conduct CheckLight's assays?

A: Luminous bacteria are not pathogenic and are harmless. No special skill is required to carry out the different tests other than very basic laboratory techniques (pipetting, dilutions etc) and equipment (pipettor, tips, luminometer).

Q: What is the danger in having high nutrients level in drinking water?

A: High nutrient levels in drinking water may lead to the following drinking water problems:

- Increased levels of microbes, including opportunistic pathogens, in the bulk water, as well as in the pipe biofilm and sediments.
- Loss of disinfectant residual through reactions between disinfectant and nutrients.
- Production of toxic and/or carcinogenic DBPs through reactions between disinfectant and nutrients.
- Unreliability of total coliform sampling due to increased growth of heterotrophic bacteria, resulting in false-positives or false-negative coliform tests. Coliform sampling may also become unreliable due to stimulated growth on pipe biofilms and sediments. These increased numbers may not be represented in coliform samples of bulk drinking water.
- Development of aesthetic problems

Q: What are the benefits of obtaining rapid information on AOC levels?

A: Acquiring this vital information would enable the water utility provider to take timely preventative action to avoid bacterial re-growth, optimally organize its disinfection program and reduce the presence of excess toxic Disinfection By Products (DBPs).

Q: How does the test correlate with the standard van der Kooij method?

A: The graph below depicts the correlation found between the two tests using samples taken from different raw drinking water sources.

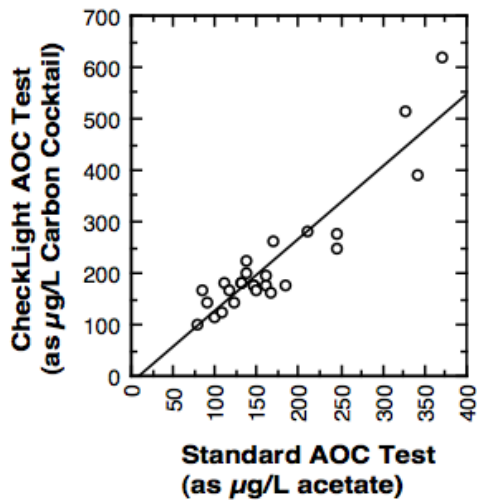
AOC CAMERON

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Q: How might chlorinated water affect luminescence?

A: Chlorine is usually introduced into drinking water systems in order to avoid bacterial contamination. Since luminous bacteria used in the assay are also sensitive to this treatment, Sodium Thiosulfate is included in the assay buffer to dechlorinate the sample before adding the bacteria. □

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Q: Why is there a control in each assay?

A: Readings of the negative control are needed in order to obtain the background reading of the cells without the sample. In addition, a set of positive controls is run in order to calibrate the system and provide the proper “translation” of light units to carbon equivalent units.

Q: Can I “play around” with the volumes of bacteria, buffers and other assay conditions?

A: No. It is extremely important to follow the test protocol instructions to the word. Since the test is very sensitive, any seemingly minor variations result in poor reliability.

Q: Can I reuse the provided test vials?

A: Due to the high sensitivity of the assay, care should be taken to keep all vials, plastic tips, and pipettes extremely clean. Do not reuse test vials and do not wash glassware pipettors or pipette tips with detergent, acid, or solvents.

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Q: What is the shelf life of the reagents?

A: The shelf life of the freeze dried bacteria is one year when stored in a deep-freezer (-14°C +/-5°C). Reagent should not be stored in a self-defrosting freezer, which defrosts by warming up periodically. The assay buffers should be stored in a regular refrigerator (~4°C) and under no circumstances should they be frozen.

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