



Comparison of Aquagenx® CBT EC+TC Kit to Other Tests

	Aquagenx® CBT EC+TC Kit	Wells in Trays or Plates	Membrane Filtration	Multiple Tube
Testing method	Presence/Absence (P/A) and Most Probable Number (MPN)	Most Probable Number (MPN) with Presence/Absence (P/A) versions	Colony Forming Units (CFU)	Most Probable Number (MPN)
Microbial indicator	<i>E. coli</i> and total coliforms	<i>E. coli</i> and total coliforms	Depends on product/system: Thermotolerant (fecal) Coliforms; <i>E. coli</i>	Depends on the differential and selective culture media used. Available for <i>E. coli</i> , thermotolerant (fecal) coliforms, coliforms and other fecal bacteria
Usability and interpreting test results	Easy for anyone to use, designed for field testing. No color comparators are required, color-change test results easy to identify.	Requires intensive training. Color comparator needed for MPN and P/A test results.	Requires intensive training, challenging to use for field testing	Requires intensive training and is impractical or impossible for field use. Extra materials are needed (see components below) sample bottles, culture tubes and racks, pipets, diluent for serial dilutions, controlled temperature incubation and in some tests, further confirmatory testing
Portability	Lightweight, easy to carry and transport	Lab use only	Can be heavy and/or cumbersome, multiple components	Lab use only
Incubation	Ambient temperature incubation $\geq 25^{\circ}$ Celsius	Requires incubator and temperature control	Requires incubator and temperature control	Requires incubator and temperature control
Components	Aquagenx EC+TC medium, Thio-Bag, Aquagenx Compartment Bag for MPN testing, Seal Clip for MPN testing, UV light (365nm) for total coliform detection	Requires multi-well trays, color comparator, rubber insert, and special plate sealer for MPN results, 6-watt 365nm UV lamp for <i>E. coli</i> detection in some samples, color comparator for P/A results; rigid sample containers, such as sample bottles, graduated cylinders or	Filter and funnel apparatus, vacuum system (vacuum flask and vacuum source, typically an electrical pump or a vacuum line in a lab) or large syringe, culture plates, petri dishes, gridded membrane filters, multiple measuring devices, absorbent pads, volume dispensers (e.g., sterile pipettes and/or graduated	Sample bottles, multiple culture tubes and racks, pipets, diluent for serial dilutions, controlled temperature incubator and in some tests, further confirmatory testing



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		pipets to dispense samples into trays or wells.	cylinders or centrifuge tubes with volume marks), tweezers, heat source to flame tweezers	
Procedures	Easy, small number of steps No color comparators required Determine <i>E. coli</i> results in ambient light Determine total coliform results that are negative for <i>E. coli</i> with UV flashlight	P/A testing: use color comparator for total coliform results, use UV light for <i>E. coli</i> results. MPN testing: tray and rubber insert preparation, sealer procedure, controlled incubation conditions	Time consuming with multiple steps: equipment set-up and preparation, culture media preparation, sterilization of multiple pieces of equipment	Time consuming with multiple steps: Making, autoclaving or boiling culture media, dispensing culture media into tubes set up in racks, adding samples and their dilutions to culture media tubes, and incubating at controlled temperatures. Some tests require further transfer of positive culture tubes to additional culture tubes for confirmation.
Growth medium storage	Store at 10-25° Celsius in a dry environment, refrigeration is optional	Store at 2-30° Celsius	Requires refrigeration and cold chain	Culture media can be stored for weeks at refrigerated temperatures, but dehydration and extraneous contamination is possible.
Post-test disposables and reusables	No reusables to clean or sterilize. To decontaminate sample, add liquid bleach or chlorine tablets to Thio-Bag or Compartment Bag. Or, treat with heat >60°C. After 30 minutes, pour contents into a sink, toilet or hole in ground and safely dispose the bags .	Trays should be decontaminated prior to disposal, typically by autoclaving	Disposables: Petri dishes (and possibly sample collection bag, large syringe for pulling a vacuum, disposable pipettes and disposable graduated centrifuge tubes) that must be decontaminated prior to disposal (e.g., with heat >60 degrees C or free chlorine). Reusables: Multiple materials and equipment that require decontamination, cleaning and sterilization (e.g., filter apparatus, pipettes and/or graduated cylinders, vacuum flask,	Disposables: culture tubes, pipets, sample bottles, and in some tests, inoculating loops that must be decontaminated prior to disposal (e.g., with heat >60 degrees C or free chlorine). Reusables: multiple materials and equipment that require decontamination, cleaning and sterilization (culture tubes, sample bottles, dilution tubes, pipets, inoculating loops that must be sterile or flame-sterilized, and equipment maintenance and calibration (e.g., incubators).



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			sample collection bottles, etc.) with solid waste.	
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