

E. Coli Determination by EPA Method 1603

Created For Wastewater laboratories and facilities.
Membrane Filtration and enumeration of
E. Coli using Modified m-TEC methodology.

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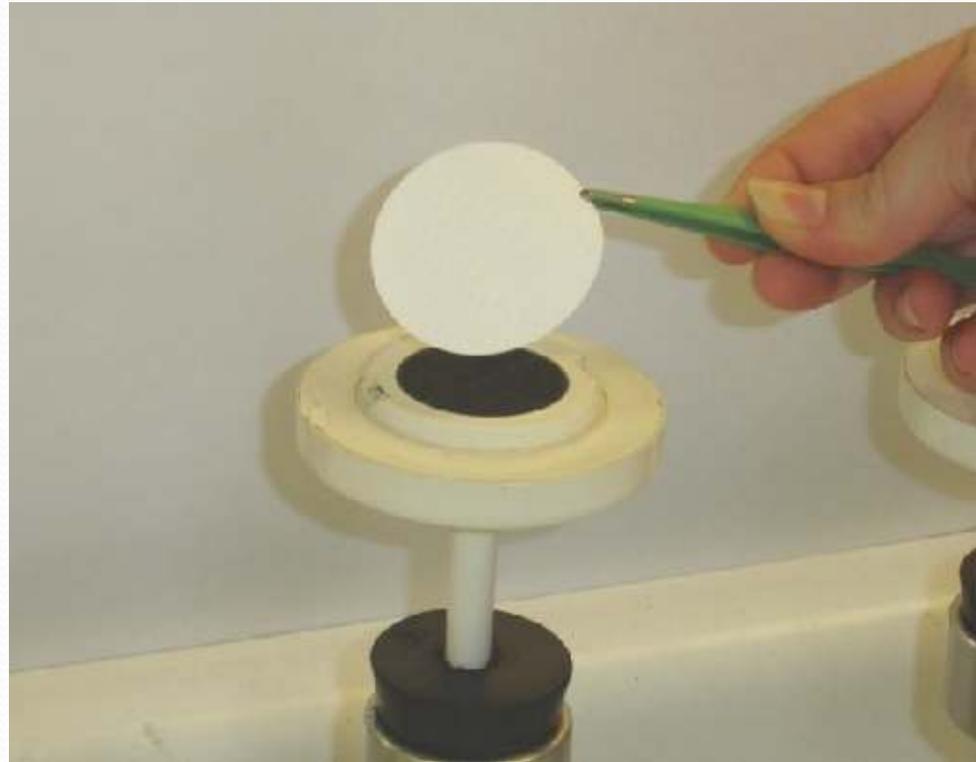
Laboratory technician placing the filter on the Manifold Base

Sterile Membrane Filter being placed on Magnetic Filter Funnel Base.

The filters are made of cellulose ester compounds and are specially designed to trap and hold bacteria during the filtration procedure.

The pore size of this filter is 0.45 microns in diameter. Clean, clear water with little sediment filters quickly, but dirty or turbid water can be difficult to filter through.

- Membrane Filter for *E. coli*



Polysulfone Filter Funnel on Filter Manifold.

The filter funnel to the right is used to pour the water sample through the filter. It sits atop the manifold base which is magnetic and prevents any of the sample from escaping during filtration by holding the filter funnel securely to the base.

The stopcock below is turned to allow a vacuum to be applied to the filter thereby facilitating and speeding up the filtration process.

Filter funnels are sterilized using an autoclave before filtration to prevent cross contamination.



Filter Placement

Placing the membrane filter onto the petri dish containing the modified m-TEC media. Be sure to flame the tweezers with alcohol before handling filters.

Place filter on media plate by starting one corner and “rolling” the rest of the filter down so it lies in contact with the media.



Incubation of *E. coli* with Modified m-TEC

Incubate prepared media plates at 35 degrees C. for two hours to resuscitate any stressed microorganisms.

Then incubate at 44.5 C. For 22+/- 2h.

Then just count the *E. coli* colonies!

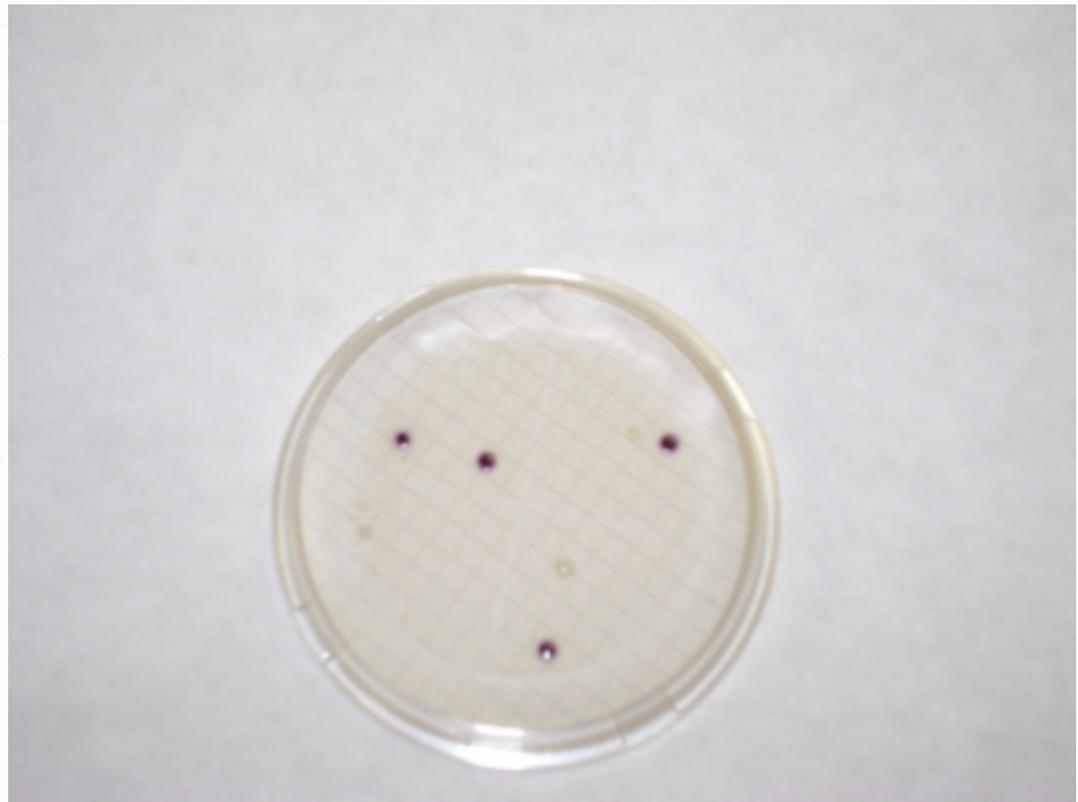


Modified m-TEC Plates with *E. coli*

The plate to the right shows a Modified m-TEC media plate with *E. coli* colonies shown in bright red-magenta color.

Modified m-TEC represents an improvement in technique because it combines a single step procedure with a chromogen that makes the red-magenta *E. coli* colonies easy to read and identify.

Photo Courtesy: Aquaplates and [Modified m-TEC.com](http://Modifiedm-TEC.com)



E. Coli with Method EPA 1603: Modified m-TEC

This has been a presentation of *E. coli* by membrane filtration using Modified m-TEC in a prepared media plate.

Presented as a courtesy by Scott J. Bradley at Aquacheck Laboratory, Inc.

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