



Colitag™ Presence/Absence (P/A) Water Test Kit For Total Coliforms and *E. coli*

Product Overview Colitag™ is a selective and differential medium for the determination of the presence or absence of total coliforms and *E. coli* in drinking water. It is a one-step, ready to use medium, to be combined with a water sample. This product is designed to test water samples for coliform and/or *E. coli* bacteria in 24 ± 2 hours and does not require further confirmation or verification steps. Colitag™ detects 1 colony-forming unit (CFU) of *E. coli* and other coliform bacteria in 100mL of water.

Method Summary A 100-mL water sample is mixed with Colitag™ followed by incubation at $35.0^\circ \text{C} \pm 0.5^\circ \text{C}$ for 24 ± 2 hours. If coliform bacteria are present, the medium changes color from near colorless to yellow. In addition, if any *E. coli* bacteria are present in the sample, a bright blue fluorescence is emitted when the sample is subjected to long wavelength (366-nanometer) ultraviolet (UV) light placed 3-4 centimeters away.

The Colitag™ method is based on the detection of two enzymes, β -glucuronidase and β -galactosidase, which are characteristic of *E. coli* and the coliform groups, respectively. Colitag™ detects **Total Coliforms** using the chromogenic substrate ortho-nitrophenyl- β -D-galactopyranoside (ONPG). Upon hydrolysis by β -galactosidase, ONPG produces a distinct yellow color, confirming the presence of coliforms in the sample. For detection of *E. coli*, Colitag™ utilizes the fluorogenic enzyme substrate 4-methylumbelliferyl- β -D-glucuronide (MUG). Upon hydrolysis by β -glucuronidase, MUG releases 4-methylumbelliferone. This reaction by-product fluoresces when exposed to UV light. The β -glucuronidase enzyme is specific to *E. coli* and observation of fluorescence differentiates this organism from other members of the coliform group.

Only the Colitag method offers a patented technology called “acid resuscitation” for increased test sensitivity. In this cutting edge technology, a small amount of acid works together with specialized nutrients to resuscitate weak and injured *E. coli* and other coliform cells.

Test Procedure for Total Coliforms and MUG-Positive *E. coli* Bacteria

1. Aseptically add Colitag™ to a 100-mL test water sample. Agitate to begin dissolution. **Note: the solution can be a pale straw-like color. This is due to the rich nutrients in the medium. Distinct color change to yellow indicates a positive sample.*
2. Incubate the sample and medium mixture at 35.0° C ± 0.5° C for 24 ± 2 hours.

Sample Interpretation

1. Visually check each sample for yellow color. If the test sample is yellow then coliform bacteria are present. If no yellow color is observed, the sample should be recorded as negative for coliform bacteria.
2. Examine the solution for fluorescence using a long wavelength (366 nm) UV lamp. If bright blue fluorescence is observed, *E. coli* bacteria are present. If no fluorescence is observed, the sample should be recorded as negative for *E. coli*.

Product Storage Store at 4°C to 30°C, away from light.

The Material Safety Data Sheet for Colitag™ is available upon request or by visiting us on-line at:

www.cpiinternational.com or,
www.colitag.com

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