Coliform Test Kit

Intended Use
Coliform Test Kit is used for the detection of *E. coli* and coliforms from water samples on the basis of enzyme substrate reaction.

Summary
The coliform group of bacteria is the principle indicator of suitability of water for domestic, industrial or other uses. Enzyme substrate tests utilize hydrolysable substrates for detection of *E. coli* and coliforms. When the enzyme technique is used, the total coliform group is defined as all bacteria possessing the enzyme β-D-galactosidase, which cleaves the chromogenic substrate, resulting in release of the chromogen. *E. coli* are defined as bacteria giving a positive total coliform response and also possessing the enzyme β-D-glucuronidase, which cleaves a fluorogenic substrate, resulting in the release of the fluorogen.

Principle
E. coli can be presumptively identified by the production of β-D-glucuronidase, which has been proposed as an alternative for IMViC tests (92- 95% of *E. coli* possess β-Dglucuronidase). The media contains all nutrients required for the growth of coliforms and *E. coli* along with the substrate. The non-fluorescent substrate is cleaved by the enzyme β-D-glucuronidase produced by *E. coli* to release the fluorogen (4-methylumbelliferone), which exhibits a bluish fluorescence when exposed to long wave (366 nm) ultraviolet light. Coliforms, on the other hand, will not produce fluorescence.

Reagent
The Microxpress® Coliform Test Kit is a reagent set for laboratory use only.
The Microxpress® Coliform Test Kit comprises of:

1. One sterile bottle (100 mL capacity)
2. Dehydrated medium enough for 100 mL.

Directions
1. Collect 100 mL water to be tested in the sterile bottle provided in the kit.
2. Add entire quantity of dehydrated medium and dissolve by swirling.
3. Incubate the bottle for 24-48 hours at 35°C-37°C.
4. Observe for colour change.

Quality Control
Appearance: Yellow coloured homogenous, free flowing powder.
Prepared Appearance: Light yellow coloured clear solution obtained on addition of water.
Cultural Response: Cultural characteristics observed after an incubation of 24-48 hours at 30°C-35°C.

Organism (ATCC)	Growth	Colour Change	Fluorescence
Escherichia coli (25922)	Good	Yellow	+
Klebsiella aerogenes (13048)	Good	Very pale blue green	-

Key: + = Fluorescence; - = No Fluorescence

Note: Inoculum cfu: 100-1000

Interpretation of Results
1. If medium changes from light yellow to very pale blue green, it indicates presence of coliforms.
2. If medium changes from light yellow to blue green along with fluorescence under long wave-length (365 nm) UV light, it indicates presence of *Escherichia coli*.

Remarks

1. The Microxpress® Coliform Test Kit is an *In vitro* diagnostic kit for laboratory and professional use only. Not for medicinal use.
2. Few strains of *Salmonella*, *Shigella*, Clostridia, *Pseudomonas*, Staphylococci produce this enzyme too.
3. Pathogenic strains of E. coli O157:H7 do not produce this enzyme.
4. Sensitivity of a rapid test may be compromised because the bacterial limit sought may be below the minimum bacterial concentration essential to rapid detection.
5. Confirmation of coliforms and *E. coli* may be achieved by use of appropriate confirmation media, incubation time and temperature.
6. Clinical samples and microbial cultures should be considered as pathogenic biohazard and handled accordingly. Good laboratory practices and hazard precautions must be observed at all time.

Storage and Stability

1. Store in a cool, dry place at 2°C-8°C away from bright light.
2. Stability of the kit is as per the expiry date mentioned on the label.

Warranty

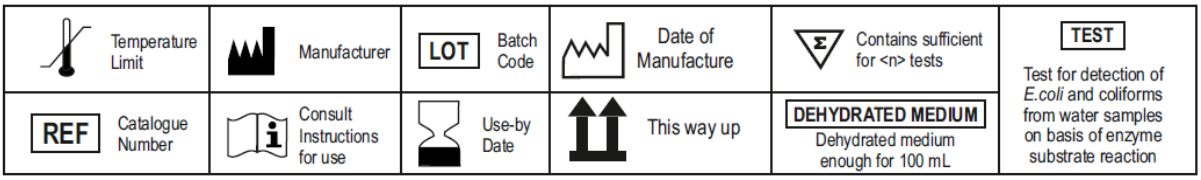
This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. New Medium for the simultaneous detection of total coliforms and E. coli in water, Kristen P. Brenner *et al.;* Appl. Environ. Microbial; Nov. 1993, 59 p.3534-3544.
2. Flurogenic Assays for immediate confirmation of E. coli, Feng, PCS and P.A. Hartmen, Appl. Environ. Microbial, Nov. 1982, 43 p. 13201329.
3. Rapid enumeration of fecal coliforms in water by a colorimetric beta-galactosidase assay, LS Warren, RE Benoit and JA Jessee, Appl. Environ. Microbial, Jan.1978, 35 p 136-141.
4. Standard Methods for the Examination of Water and Wastewater, 20th edition, APHA.
5. M. Manafi, New approaches for the fast detection of indicators, in particular enzyme detection methods (EDM).
6. OECD Workshop molecular methods for safe drinking water, 1998.
7. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat. No.	Product Description	Pack Size
204030260001	Ready Prepared Kit	1 Kit (1 Test)



Revision: 0825/VER-03

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.