

51489 Rapid Coliform *ChromoSelect* Broth (Coliform Rapid *ChromoSelect* Broth)

Rapid Coliform *ChromoSelect* Broth is used for detection and conformation of *Escherichia coli* and coliforms on the basics of enzyme substrate reaction from water samples, using a combination of chromogenic and fluorogenic substrate.

Composition:

Ingredients	Grams/Litre
Peptone, special	5.0
Sodium chloride	5.0
Sorbitol	1.0
Dipotassium hydrogen phosphate	2.7
Potassium dihydrogen phosphate	2.0
Sodium lauryl sulphate	0.1
Chromogenic substrate (X-Gal)	0.08
Fluorogenic substrate (MUG)	0.05
IPTG	0.1
Final pH (at 25 °C) 6.8 +/- 0.3	

Store prepared media below 4 °C, protected from direct light. Store dehydrated powder in a dry place in tightly-sealed containers at 4 °C.

Directions:

Suspend 16.0 grams (single strength) or 32.0 grams (double strength) in 1000 ml distilled water. Boil to dissolve the medium completely. Dispense as desired and sterilize by autoclaving at 1 bar pressure (121 °C) for 15 minutes.

Principle and Interpretation:

The Rapid Coliform *ChromoSelect* Broth is a modification of LMX Broth described by Manafia and Kneifel [2]. The Rapid Coliform *ChromoSelect* Broth is used for the simultaneous detection of total coliforms and *E. coli*.

Special peptone which is rich in tryptophan content, provides essential growth nutrients and is useful for the simultaneous detection of indole production. Sorbitol provides the carbon source. The phosphate salts provide buffering action for rapid growth of coliforms. Sodium lauryl sulphate makes the media selective by inhibiting accompanying microflora, especially the gram-positive organisms. The fluorogenic substrate (MUG), is split by enzyme β-D-glucuronidase, which is specially found in *E. coli*. The reaction is indicated by a blue fluorescence under UV light. The presence of total coliforms is indicated by a blue green color of the broth due to cleavage of chromogenic substrate (X-Gal). IPTG amplifies enzyme synthesis and increases the activity of β-D-galactosidase. To confirm presence of *E. coli*, by indole reaction overlay the medium with Kovac's reagent (Cat. No. 67309). The layers turns red within 2 minutes in case of positive reaction.

Cultural characteristics after 18-24 hours at 35 °C.

Organisms (ATCC)	Color Change	Fluorescence	Indole reaction	Recovery
<i>Enterobacter aerogenes</i> (13048)	blue-green	-	-	+++
<i>Escherichia coli</i> (25922)	blue-green	+	+	+++



References:

1. G. Hahn, E. Wittrock, *Acta Microbiologica Hungarica*, 38(3-4), 265-271 (1991)
2. M. Manafi, W. Kneifel, *Zbl. Hygiene und Umweltmedizin*, 189, 225-234 (1989)
3. M. Manafi, *Forum Stadte -Hygiene*, 41, 181-184 (1990)
4. M. Manafi, *Ernährung /Nutrition*, 15, Nr. 10 (1991)
5. M. Manafi, W. Kneifel, *Acta Microbiologica Hungarica*, 33(3-4), 293-304(1991)
6. M. Manafi, W. Kneifel, S., Bason, *Microbiol. Rev.* 55, 335-348 (1991)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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