

**PHENOL RED RAFFINOSE BROTH**
**TM 819**

for determining the ability of microorganism to ferment raffinose

**Composition**

| Ingredients      | Gms/Ltr. |
|------------------|----------|
| Proteose peptone | 10.000   |
| Beef extract     | 1.000    |
| Sodium chloride  | 5.000    |
| Raffinose        | 5.000    |
| Phenol red       | 0.018    |

\* Dehydrated powder, store in a dry place, in tightly-sealed containers at 24°C and protect from direct Sunlight.

**Instructions for Use**

Dissolve 21.00 gms in 1000 ml of distilled water and mix well. Heat if necessary to ensure complete dissolution. Distribute in fermentation tubes (tubes containing inverted Durham's tubes). Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.

**Appearance:** Red coloured clear solution without any precipitate

**PH (at 25°C):** 7.4 ± 0.2

**Principle**

**PHENOL RED RAFFINOSE BROTH** is used for determining the ability of microorganism to ferment raffinose. Phenol Red Broth Medium with various carbohydrates serves as a differential medium by aiding in differentiation of various species and genera by their ability to ferment the specific carbohydrate, with the production of acid or acid and gas.

Proteose peptone and beef extract serve as sources for carbon and nitrogen. Sodium chloride is the osmotic stabilizer. Phenol red is the pH indicator, which turns yellow at acidic pH i.e. on fermentation of raffinose. Gas formation is seen in Durhams tubes. All of the Enterobacteriaceae grow well in this medium. In addition to producing a pH colour shift, the production of mixed acids, notably butyric acids, often results in a pungent, foul odour from the culture medium.

**Interpretation**

Cultural characteristics observed after incubation at 35 - 37°C for 18 - 24 hours.

| Microorganisms | ATCC | Inoculum<br>(CFU) | Growth |
|----------------|------|-------------------|--------|
|----------------|------|-------------------|--------|

|                               |       |                 |           |
|-------------------------------|-------|-----------------|-----------|
| <i>Citrobacter freundii</i>   | 8090  | 10 <sup>3</sup> | Luxuriant |
| <i>Escherichia coli</i>       | 25922 | 10 <sup>3</sup> | Luxuriant |
| <i>Enterobacter aerogenes</i> | 13048 | 10 <sup>3</sup> | Luxuriant |
| <i>Klebsiella pneumoniae</i>  | 13883 | 10 <sup>3</sup> | Luxuriant |
| <i>Proteus vulgaris</i>       | 13315 | 10 <sup>3</sup> | Luxuriant |
| <i>Salmonella Typhi</i>       | 6539  | 10 <sup>3</sup> | Luxuriant |
| <i>Salmonella Typhimurium</i> | 14028 | 10 <sup>3</sup> | Luxuriant |
| <i>Serratia marcescens</i>    | 8100  | 10 <sup>3</sup> | Luxuriant |
| <i>Shigella flexneri</i>      | 12022 | 10 <sup>3</sup> | Luxuriant |

## References

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