

Violet Red Bile Agar (i23191)

For the detection and enumeration of coliforms in food, animal feed and environmental samples.

Industry: Dairy products / Water / Food

Principles & Uses

Violet Red Bile Agar (VRBA) is a medium designed for detecting and enumerating lactose-fermenting bacteria, with a specific focus on the differentiation of *coliforms* or Coliaerogenes group from non-lactose fermenters in various samples, including dairy products, water, and foods.

This medium contains peptone and yeast extract as sources of vital nutrients, including nitrogen, vitamins, and minerals necessary for bacterial growth. Lactose serves as the fermentable carbohydrate, resulting in acid production, which is detected by the pH indicator neutral red. Bile salts and crystal violet play a vital role in inhibiting the growth of Gram-positive bacteria. Sodium chloride maintains the osmotic balance, and bacteriological agar solidifies the medium.

The distinctive characteristics of VRBA include red colonies with red-purple halos formed by lactose fermenters. The purplish-red colonies, often surrounded by a reddish zone of precipitated bile, are considered typical of *coliforms* and do not require further confirmation. However, atypical colonies, which may arise from milk products with sugars other than lactose, should be confirmed using Brilliant Green Bile Broth tubes. VRBA is a valuable tool for screening and distinguishing lactose-fermenting bacteria and *coliforms* in diverse samples. Further biochemical tests may be necessary for precise identification.

Composition (gr/L)

Peptone 7, Yeast Extract 3, Lactose 10, Bile Salts 1.5, Sodium Chloride 5, Neutral Red 0.03, Crystal Violet 0.002, Agar 13.

Final pH at 25°C 7.4 ± 0.2

Preparation from dehydrated Powder

Suspend 39.5 g of the powder in 1 Liter of purified water. Mix thoroughly. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. **DO NOT AUTOCLAVE.** Cool to 45-50°C and use immediately.

Quality Control

Dehydrated Appearance: Beige to reddish-beige, free-flowing, homogeneous.

Prepared Appearance: Reddish-purple, Slightly opalescent, no significant precipitate.

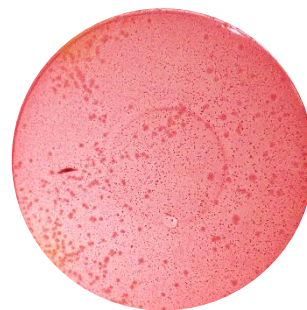
Reaction of 3.95% Solution at 25°C: pH 7.4 ± 0.2

Cultural Response

Cultural characteristics were observed after incubation at 32 ± 1°C for 24 ± 2 hours.

Organism (ATCC*)	Recovery	Colony color
<i>Escherichia coli</i> (25922)	Good	Deep red with red precipitate around colonies
<i>Enterobacter aerogenes</i> (13048)	Good	Red, may have slight red precipitate around colonies
<i>Shigella flexneri</i> (29903)	Good	Colorless with no precipitate
<i>Staphylococcus aureus</i> (25923)	Marked to complete inhibition	-
<i>Bacillus cereus</i> (11778)	None	-

*ATCC is a registered trade mark of the American Type Culture Collection.



E. coli on VRBA, cultured using pour plate method.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.