Baird-Parker Agar (i23013)

For the isolation and enumeration of *Staphylococcus aureus* in foods and pharmaceutical materials

Industry: Clinical / Food / Cosmetics

Principles & Uses

Baird Parker Agar is employed for isolating and differentiating coagulase-positive *staphylococci*, commonly used in food and pharmaceutical testing. The medium incorporates casein peptone and meat extract as nitrogen sources for bacterial growth. Yeast extract contributes nitrogen and essential nutrients, including the vitamin B12 complex. Lithium and tellurite (in egg yolk with tellurite emulsion) components inhibit contaminants, while glycine and pyruvate enhance *Staphylococci* growth. Egg yolk with tellurite emulsion addition results in a yellow, slightly opaque medium. The appearance of a clear halo and grey-black colonies indicates presumptive coagulase-positive *staphylococci*, as there's a strong correlation between the coagulase test and lipolytic activity.

Baird Parker Agar, when combined with Rabbit Plasma Fibrinogen, allows for the detection of coagulase activity, with positive organisms displaying grey to black colonies surrounded by an opaque halo. This agar has the benefit of reducing the need for an additional coagulase test. It's worth noting that the medium can suppress the growth of *Proteus* species when supplemented with Sulfamethazine.

Composition (gr/L)

Pancreatic Digest of Casein 10, Beef Extract 5, Yeast Extract 1, Glycine 12, Sodium Pyruvate 10, Lithium Chloride 5, Agar 15.

Final pH at 25°C 6.8 ± 0.1

Preparation from dehydrated Powder

Suspend 58 g of the powder in 950 mL of distilled water. Autoclave at 121°C for 15 minutes. Cool to 45-50°C and aseptically add 50 mL of Egg yolk Tellurite Enrichment. Mix thoroughly but gently.

Quality Control

Dehydrated Appearance: Light tan, free-flowing, homogeneous.

Prepared Appearance: Yellow, opaque.

Reaction of 5.8 % Solution at 25°C: pH 6.8 ± 0.1

Cultural Response

Incubate aerobically at 35-37 °C for 42-48 hours and read after 18-24 and 42-48 hours.

Organism (ATCC*)	Recovery	Colony Color	Clear zones
Bacillus subtilis (6633)	None to poor	Brown	-
Staphylococcus aureus (25923)	Good	Black	+
Proteus mirabilis (25933)	Good	Brown	-
*Escherichia coli (*8739)	Inhibited	-	-

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

S. aureus with black colonies and clear zone around.

Storage

Store dehydrated medium at 15-30 °C and prepared medium at 2-8 °C.