Baird Parker Agar Base

Intended Use
Baird Parker Agar Base is a medium with added supplements for selective isolation and enumeration of coagulase positive Staphylococci from clinical and non-clinical specimens.

Summary
Baid Parker Agar was developed by Baid Parker, modified from the tellurite-glycine formulation of Zebovit *et al.,* for the recovery of coagulase positive Staphylococci. It was suggested that this medium be substituted for Vogel and Johnson Agar (VJ) because it was less inhibitory than VJ Agar, yet more selective and also possessed a diagnostic aid (egg yolk reaction) not present in VJ Agar. It was later officially accepted by the AOAC and is also recommended by the USP and IP for use in microbial limit tests. Baid Parker Agar is recommended by APHA for the r examination of milk and foods and is also included in the Bacteriological Analytical Manual for testing of cosmetics.

Principle
Tryptone, beef extract and yeast extract provide nitrogenous compounds, carbon, sulphur and other growth factors. Sodium pyruvate protects the injured cells, helps recovery and stimulates the growth of *S. aureus* without destroying the selectivity. Glycine enhances the growth of *Staphylococcus*. Lithium chloride inhibits most of the micro flora except *Staphylococcus aureus*. The tellurite additive inhibits egg-yolk clearing strains other than *S. aureus* and imparts a black colour to the colonies. The egg yolk, apart from being an enrichment, aids in the identification process by demonstrating lecithinase activity (egg-yolk reaction). Egg yolk makes the medium yellow, opaque. Proteolytic bacteria produce a clear zone around colonies in egg yolk containing medium. A clear zone around grey-black colonies on this medium is diagnostic for coagulase positive Staphylococci. An opaque zone of lipolytic activity may be developed around the colonies on further incubation.

Identity of *Staphylococcus aureus* isolated on Braid Parker Agar must be confirmed with a coagulase reaction. Coagulase activity can be detected by adding plasma fibrinogen mixture in place of egg yolk emulsion. On this medium, Staphylococcal coagulase positive colonies are white to grey black surrounded by an opaque zone of coagulase activity, within 24-40 hours of incubation at 35ºC. reduction in tellurite is required because of the absence of egg yolk emulsion, resulting in translucent agar and white to grey coloured colonies of Staphylococci.

Formula*

Ingredients	**g/L**
Tryptone	10.0
Yeast Extract	1.0
Beef Extract	5.0
Sodium Pyruvate	10.0
Glycine	12.0
Lithium Chloride	5.0
Agar	20.0
Final pH (at 25°C)	7.0 ± 0.2

*Adjusted to suit performance parameters

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2ºC-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of specimen
Clinical samples – Blood
Food and dairy samples
Pharmaceutical samples

Specimen Collection and Handling

Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Suspend 63.00 g of the powder in 950 mL of purified / distilled water. Mix thoroughly.
2. Boil with frequent agitation to dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. Cool to 45°C-50°C and aseptically add 50 mL of concentrated Egg Yolk Emulsion (204050370100) and 3 mL sterile 3.5% Potassium Tellurite Solution (204160720001), or 50 mL Egg Yolk Tellurite Emulsion (204050380100). One vial of BP Sulpha Supplement (204020670005) can be added if desired.
5. Mix thoroughly, but gently and pour into sterile petridishes.

Warning: Lithium chloride is harmful, bodily contact and inhalation of vapours must be avoided. On contact with skin, wash with plenty of water immediately.

Quality Control

Dehydrated Appearance: Cream to yellow coloured, homogeneous, free flowing powder.
Prepared Appearance: Basal medium: Light amber coloured slightly opalescent gel, With addition of egg yolk Tellurite emulsion: Yellow coloured opaque gel forms in petridishes.
Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP and growth is observed after an incubation at 30°C-35°C for 24 to 48 hours.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 24 hours.
Indicative Properties: The test results observed are within the specified temperature and time, inoculating ≤ 100 cfu of appropriate microorganism.

Organisms (ATCC)	Growth	Colour of Colony	Lecithinase Production
Bacillus spizizenii (6633)	Partial inhibition	Dark brown	+
Proteus mirabilis (25933)	Good	Brown to black	-
Staphylococcus aureus subsp. *aureus* (25923)	Good	Grey- black shiny	+
Staphylococcus aureus subsp. *aureus* (6538)	Good	Grey- black shiny	+
Staphylococcus epidermidis strain PCI 1200 (12228)	Good	Black	-

Note: For Good growth - Growth obtained on test media should not differ by a factor greater than 2 from calculated value for a standardized inoculum.

Interpretation of Results

1. Typical colonies of *S. aureus* are black, shiny, convex and surrounded by clear zones (E-Y reaction) of approximately 2-5 mm. coagulase negative Staphylococci generally do not grow well; if growth occurs, the typical clear zones are absent.
2. If negative, reincubate for additional 24 hours.

Quantitative results

1. Count the plates with 20-200 typical Staphylococci *aureus* like colonies, express as colony forming units (cfu) per gram or mL of sample, taking into account the applicable dilution factor.
2. Also perform coagulase test.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions/Limitations

1. Colonies of some contaminating organisms may digest the coagulase halo reaction.
2. Regardless of negative reactions, consider all doubtful colonies as *S. aureus* and carry out further tests like coagulase reaction because some strains of *S. aureus* give negative egg yolk reaction (in foods, especially cheese).
3. Braid Parker Agar Base with supplements is selective for coagulase positive Staphylococci, but other including *Proteus* species may grow (addition of 50 mg/L Sulphamethazine is found to suppress growth and swarming of *Proteus* species).
4. The majority of contaminating flora that grows produces white to brown colonies with no clearing of the egg yolk.
5. Prepare fresh medium for best results.

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. Baird Parker AC and Davenport E; 1965 J. Appl. Bacteriology, 28:390.
2. Baird Parker AC; 1962, J. Appl. Bacteriology; 25:12.
3. Tardio and Baer, 1971; J. Assoc. Off. Analy. Chem. 54:728.
4. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201020050100	Dehydrated Culture Media	100 g
201020050500	Dehydrated Culture Media	500 g
205020550100	Ready Prepared Pate (90 mm)	100 Plates