

Instructions for Use

REF - PP1420

Baird Parker Agar with 5% Egg Yolk Tellurite

Pre-Poured Media

1. Intended Use

PP1420 Baird Parker Agar with 5% Egg Yolk Tellurite is a moderately selective and differential medium for the isolation and presumptive identification of coagulase-positive staphylococci in food samples ^(1,2).

2. Composition*

<u>Ingredient</u>	<u>g/L</u>
Enzymatic digest of casein	10.0
Yeast extract	1.0
Meat extract	5.0
Sodium pyruvate	10.0
Glycine	12.0
Lithium chloride	5.0
Agar	20.0
Potassium tellurite	0.1
Egg yolk emulsion	50.0ml

*Adjusted/supplemented as needed to meet performance requirements

3. Summary and Explanation

First developed by Baird-Parker in 1962 ⁽¹⁾, this medium is used extensively for detecting *Staphylococcus aureus* in foods, dairy products, and other materials ⁽³⁾.

PP1420 is recommended by the Bacteriological Analytical Manual ⁽⁴⁾ and tested in accordance with ISO 11133:2014 ⁽⁵⁾ and the principals of ISO 6888-1:2021 ⁽⁶⁾.

4. Principle

Enzymatic digest of casein, meat extract and yeast extract supply the required carbon, nitrogen, and vitamins. Glycine and sodium pyruvate are included as growth enhancers while the pyruvate also acts as a neutraliser of toxic peroxides. The medium is made selective by the inclusion of lithium chloride and the addition of potassium tellurite ⁽¹⁾. Coagulase positive staphylococci are differentiated by the addition of egg yolk tellurite due to their ability to break down the egg yolk. Clear zones around colonies form due to the proteolytic action of lecithinase. A secondary opaque zone, surrounding presumptive positive colonies, may also form due to lipase activity. Potassium tellurite is reduced by staphylococci giving rise to blackening of colonies.

5. Physical Characteristics

	Medium
Appearance and Colour	Pale yellow firm gel
pH	7.2 ± 0.2

6. Materials Provided

PP1420 Baird Parker Agar with 5% Egg Yolk Tellurite is supplied in packs of 10 x 90mm P090 Petri dishes (18-22ml fill) (product code: PP1420-P090); each plate is ink-jet printed with (abbreviated) product name, product code, lot number and expiry date.

7. Materials Needed but not Provided

Standard microbiological laboratory materials e.g., autoclave, sterile loops or swabs, collection containers, incubators, and quality control organisms.

8. Specimens

PP1420 Baird Parker Agar with 5% Egg Yolk Tellurite is suitable for the testing of the following specimens:

- Food and Environmental: products for human consumption, animal feed and environmental samples.

Sampling and transport equipment must be used in accordance with the end user's suppliers' recommendations. Refer to appropriate standard method or local guidance on sample collection and subsequent processing.

9. Test Procedures and Interpretation of results

Allow the plates to come to room temperature.

Food/Environment Specimens ^(4 6)

According to BAM and ISO 6888-1:2021 ^(4 6), check to see if the specimen requires serial dilutions prior to inoculation to the prepared medium.

- Process the food/environmental specimen as required by local guidelines.
- Inoculate specimen directly onto the medium and streak across the agar surface using a sterile loop or automated plate streaker.
- Incubate the plates at 34-38°C for 24-48 hours. Check for the presence of typical colonies after 24 hours incubation and then re-incubate for a further 24 hours before colony enumeration and confirmation.

After incubation, examine agar for colonies (typical & atypical colony appearances outlined in Quality Control table below).

Perform further biochemical, serological, or mass spectroscopy testing to confirm identity of presumptive positive isolates. Refer to relevant local guidelines.

10. Quality Control

Organism	Incubation	Result (Specificity)
<i>S. aureus</i> (NCTC 12981)	37 ± 1°C for 48 ± 2 hours	Growth: Black colonies with halo and zone of clearing
<i>S. saprophyticus</i> (NCTC 7292)	37 ± 1°C for 48 ± 2 hours	Growth: Black colonies with NO halo or zone of clearing
<i>E. coli</i> (NCTC 12241)	37 ± 1°C for 48 ± 2 hours	Inhibited
<i>S. epidermidis</i> (NCTC 13360)	37 ± 1°C for 48 ± 2 hours	Partially inhibited: Black colonies with NO halo or zone of clearing

It is the responsibility of the user to perform Quality Control testing taking into consideration the intended use of the medium and in agreement with any local relevant guidelines (e.g., frequency, strains used, atmosphere, incubation temperature).

11. Performance

To fully verify PP1420 Baird Parker Agar with 5% Egg Yolk Tellurite performance, samples were tested to assess colony morphology and recovery level (where an acceptable range is ≥50% and ≤120%) compared to a non-selective reference medium. Samples were inoculated with 30-150cfu and incubated at 37 ± 1°C for 48 ± 2 hours. All samples showed expected recovery and morphology of the required test organisms: *Staphylococcus aureus* (NCTC 12981), *Staphylococcus saprophyticus* (NCTC 7292), *Escherichia coli* (NCTC 12241) and *Staphylococcus epidermidis* (NCTC 13360). Therefore, it can be concluded that PP1420 Baird Parker Agar with 5% Egg Yolk Tellurite, meets performance criteria when used according to the instructions outlined above. Trend analysis data available upon request.

12. Limitations of the Media

- Biochemical and, if indicated, serological testing using pure cultures may be necessary for complete identification; these tests should be performed from a non-selective agar.
- Due to natural variation, some strains may grow poorly on this medium.

13. Precautions and Warnings

This product is considered non-hazardous under CLP regulations. Wear such PPE as recommended by laboratory COSHH assessment. During and after use, always handle all materials in a manner conforming to Good Laboratory Practices and consider that material under test should be regarded as a potential biohazard if mishandled.

Refer to E&O Poured Plate Material Safety Data Sheet.

14. Storage conditions and Shelf life

Store PP1420 in the original packaging between 2 and 8°C in the dark. Kept under these conditions it may be used up to date of expiry shown on product label.

Dispose of in accordance with local and national authority requirements. Do not use media if it is contaminated, discoloured, out of date, cracked or a precipitate is present. Additionally, do not use media if it has been stored inappropriately or the packaging has been damaged.

15. References

1. Baird-Parker A. C. 1962; An improved diagnostic and selective medium for isolating coagulase positive staphylococci. J. appl. Bact. 25:12-19.
2. Tardio, J.L. and Baer, E.F. (1971) Comparative Efficiency of Two Methods and Two Plating Media for Isolation of *Staphylococcus aureus* from Foods. Journal of Association of Official Analytical Chemists, 54(3): 728–731.
3. Salfinger, Y. and Tortorello, M. (eds.) (2015) Compendium of methods for the microbiological examination of foods. 5th ed. Washington DC: American Public Health Association Press
4. Tallent, S., Hait, J., Bennett, R.W. and Lancette, G.A. (1998) BAM Chapter 12: *Staphylococcus aureus*. US Food and Drug Administration. Bacteriological Analytical Manual Online, 8th Edition, Rev. 2016. Silver Spring, MD.
5. International Organization for Standardization (2014) 11133:2014 Microbiology of food, animal feed and water - Preparation,

production, storage, and performance testing of culture media. Geneva: ISO.

6. International Organization for Standardization (2021) 6888-1:2021 Microbiology of the food chain - Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 1: Method using Baird-Parker agar medium. Geneva: ISO.

Version History*

001 09/06/23 - New Document Created

*Note: minor typographical, grammatical, and formatting changes are not included in the revision history.



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TABLE OF APPLICABLE SYMBOLS

 REF Catalogue number	 LOT Batch code		 Manufacturer	 Use by
 Temperature limitation	 Contents sufficient for <n> tests	 Consult Instructions for Use	 Keep away from direct light	 Store in a dry place