Technical Data Sheet

ReadyPlate™ CT Baird Parker Agar ISO 6888

Ordering number: 1.46189.0020

For the isolation, presumptive identification and enumeration of *Staphylococcus aureus* from food and animal feed as well as from other materials.

General

This culture medium complies with the specifications given by EN ISO 6888, FDA-BAM and APHA.

Mode of Action

The This medium attains its selectivity with potassium chloride, lithium chloride and glycine. Sodium pyruvate is essential to both recovery of damaged Staphylococcus aureus cells and their subsequent growth. Agar is the solidifying agent.

With added egg yolk tellurite emulsion, coagulase-positive staphylococci form black or grey colonies due to tellurite reduction with or without egg yolk reaction. Egg-yolk reaction is shown by characteristic zones and rings formed as a result of lipolysis and/or proteolysis.

According EN ISO 6888-1, the addition of sulfamethazine is advised to suppress the growth and swarming of Proteus spp. if these are suspected in the test sample.

Typical Composition (g/l)

Specified by ISO 6888		FDA BAM M17		ReadyPlate™ Baird-Parker ISO 6888	
Pancreatic digest of casein	10.0	Tryptone	10.0	Enzymatic digest of casein*	10.0
Meat extract	5.0	Beef extract	5.0	Meat extract**	5.0
Yeast extract	1.0	Yeast extract	1.0	Yeast extract	1.0
Sodium pyruvate	10.0	Sodium pyruvate	10.0	Sodium pyruvate	10.0
L-Glycine	12.0	Glycine	12.0	Glycine	12.0
Lithium chloride	5.0	Lithium chloride·6H_2O	5.0	Lithium chloride	5.0
Agar	12.0 to 22.0	Agar	20.0	Agar-agar***	12.0 to 22.0
Water	950	Water	950	Water	n/a
Potassium tellurite	0.01	Egg yolk-tellurite solution (contains 0.01 g/50 ml potassium tellurite)	50 ml	Potassium tellurite	0.1
20% egg yolk emulsion	50 ml			Egg Yolk Emulsion	50 ml*****
pH at 25°C		pH at 25°C		pH at 25°C	6.8 ± 0.2

* Enzymatic digest of casein is equivalent to tryptone.
** Meat extract is equivalent to beef extract.
*** Agar-agar is equivalent to other different terms of agar.
**** EN ISO 6888 and FDA-BAM specify no final pH for Baird-Parker agar after supplementation, only for the base medium (7.0 ± 0.2 at 25°C).
***** EN ISO 6888 states that for usage of a commercial egg yolk emulsion, the concentration should be used according to the manufacturer's instruction.

Application and Interpretation

Depend on the purpose for which the medium is used.

Following the procedure for direct enumeration given by EN ISO 6888-1, inoculate by means of a sterile pipette with 0,1 ml of the test sample or the initial dilution on each BAIRD-PARKER agar plate. Repeat for further dilution if necessary.

Carefully spread the inoculum as quickly as possible over the surface of the agar plate, trying not to touch the sides of the dish, using a spreader. Allow the plates to dry with their lids on for about 15 min at the laboratory temperature.

Invert the dishes prepared above and place them for 24 h ± 2 h in the incubator (6.2) set at 34 °C to 38 °C. Then re-incubate for a total of 48 h ± 4 h.

Note: Colonies with typical appearance after 24 h ± 2 h incubation can lose their typical appearance after 48 h ± 4 h incubation, due to overgrowth with enlargement of the clear zone during the second phase of incubation. Counting only at 48h ± 4h can lead to low counts or no counts.

Following the procedure for enumeration and detection by MPN given by EN ISO 6888-3, inoculate BAIRD-PARKER agar plates by subculturing the selective enrichment in GranucultTM GIOLITTI-CANTONI broth acc. ISO 6888 (cat. no. 1.10675.0500).

For spreading, preparation of the inoculated plates and incubation follow the instructions as given above.

For enumeration and confirmation follow the procedure e.g. given by EN ISO 6888-1/-3.
Typical colonies on BAIRD-PARKER agar are black or grey, shining and convex (1 mm to 1,5 mm in diameter after incubation for 24 h, and 1,5 mm to 2,5 mm in diameter after incubation for 48 h) and are surrounded by a clear zone which may be partially opaque. After incubation for at least 24 h, an opalescent ring immediately in contact with the colonies may appear in this clear zone.

Atypical colonies on BAIRD-Parker agar have the same size as typical colonies and may present one of the following morphologies:
- shining black colonies with or without a narrow white edge; the clear zone is absent or barely visible and the opalescent ring is absent or hardly visible;
- grey colonies free of clear zone.

Atypical colonies are formed mainly by strains of coagulase-positive staphylococci contaminating, for example, dairy products, shrimps and giblets. They are less often formed by strains of coagulase-positive staphylococci contaminating other products.

Other colonies on BAIRD-PARKER agar are all the remaining colonies possibly present on the plates that do not show the typical or atypical appearance as described above, and are considered as the background flora.

Storage and Shelf Life

The product can be used for sampling until the expiry date if stored upright, protected from light and properly sealed at 15 to 25°C.

Condensation can be prevented by avoiding quick temperature shifts and mechanical stress.

The testing procedures as described on the CoA can be started up to the expiry date printed on the label.

Disposal

Please mind the respective regulations for the disposal of used culture medium (e.g. autoclave for 20 min at 121 °C, disinfect, incinerate etc.).

Quality Control

Function	Incubation	Control strains	Reference medium	Method of control	Criteria (% Recovery)	Characteristic
Productivity	24 ± 2h at 34-38°C	*Staphylococcus aureus* ATCC® 6538 (WDCM 00032) *Staphylococcus aureus* ATCC® 25923 (WDCM 00034)	Tryptic Soy Agar (TSA)	Quantitative	≥ 50	black or grey colonies with clear halo (egg yolk clearing reaction)
Selectivity	48 ± 2h at 34-38°C	*Escherichia coli* ATCC® 8739 (WDCM 0012) *Escherichia coli* ATCC® 25922 (WDCM 00013)	-	Qualitative	No growth	-
Specificity	(24 ± 2) h to (48 ± 2) h at (37 ± 1)°C	*Staphylococcus saprophyticus* ATCC® 15305 (WDCM 00159) *Staphylococcus epidermidis* ATCC® 12228 (WDCM 00036)	-	Qualitative	No limit	black or grey colonies without clearing reaction

The performance test is in accordance with the current version of EN ISO 11133.
A recovery rate of 50 % is equivalent to a productivity value of 0.5.

Literature

ISO International Standardisation Organisation. Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 1: Technique using Baird-Parker agar medium + Amendment 1: Inclusion of precision data. EN ISO 6888-1:1999/Amd 1:2003.

ISO International Standardisation Organisation. Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 2: Technique using rabbit plasma fibrinogen agar medium - Amendment 1: Inclusion of precision data. EN ISO 6888-2:1999/Amd 1:2003.

ISO International Standardisation Organisation. Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 3: Detection and MPN technique for low numbers. EN ISO 6888-3:2003.

ISO International Standardisation Organisation. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media. EN ISO 11133:2014.

APHA (2015) Compendium of Methods for the Microbiological Examination of Foods. 5th ed. American Public Health Association, Washington, D.C.

FDA-BAM (2001) Chapter No. 12: Staphylococcus aureus. U.S. Food and Drug Administration - Bacteriological Analytical Manual.

Baird-Parker, A.C. 1962: An improved diagnostic and selective medium for isolating coagulase positive staphylococci. J. Appl. Bact. 25,12-19.

Baird-Parker, A.C. and Davenport, E. 1965. The effect of recovery medium on the isolation of Staphylocoocus aureus after heat treatment and after storage of frozen or dried cells. J. Appl. Bacteriol. 28, 390-402.

Smith, B.A. and Baird-Parker, A.C. 1964. The use of sulphamethazine for inhibiting Proteus spp. on Baid-Parker's isolation medium for Staphyloccous aureus. J. Appl. Bacteriol. 27, 78-82.

Zangerl, P. 1999. Comparison of Baird-Parker agar and rabbit plasma fibrinogen medium for the enumeration of Staphylococcus aureus in raw milk and raw milk products. Arch. Lebensmittelhyg. 50, 4-9.

Zangerl, P. and Becker, H. 2012. Culture media used in the detection and enumeration of coagulase-positive staphylocooci. In: Handbook of Culture Media for Food and Water Microbiology. (Corry, J.E.L., Curtis, G.D.W. and Baird, R.M. eds)., pp. 130 - 145. Royal Society of Chemistry, Cambridge, UK.

Ordering Information

Product	Cat. No.	Pack size
ReadyPlate™ Baird-Parker ISO 6888	1.46137.0020	20 x 90mm
Granucult™ BAIRD PARKER agar (base) acc. ISO 6888 and FDA-BAM	1.05406.0500	500g
ReadyPlate™ CT Baird Parker ISO 6888	1.46189.0020	20 x 55mm
Granucult™ GIOLITTI-CANTONI broth (base) acc. ISO 6888	1.10675.0500	500g
Egg yolk Tellurite emulsion sterile, 20%, for microbiology	1.03785.0001	10 x 50ml

Lit.No. MS_PF11859EN