Technical Information

Park and Sanders Broth Base

Product Code: DM 2185

Application: - Park and Sanders Enrichment Broth Base is recommended for selective enumeration of thermotolerant *Campylobacter* species from foods.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Peptic digest of animal tissue	10.000
Yeast extract	2.000
Dextrose	1.000
Sodium chloride	5.000
Sodium biselenite	0.100
Sodium pyruvate	0.250
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Park and Sanders Broth was formulated by Park and Sanders for enrichment of *Campylobacter* species [(1)] and is recommended by APHA [(2)], for selective enumeration of thermotolerant *Campylobacter* species in food and animal feed.

Casein enzymic hydrolysate, peptic digest of animal tissue, yeast extract provide nitrogenous compounds, carbon, sulphur, vitamins and trace elements. Dextrose is the energy source. *Campylobacter* being microaerophilic. Sodium pyruvate helps for aerotolerance. Sodium sulphite helps in survival of the organism in higher nitrogen atmosphere [(3)]. Supplementation of base with antibacterial and antifungal agents as described by Park and Sanders [(1)] markedly reduced growth of normal enteric bacteria and improved recovery of *Campylobacter* species.

After addition of blood and Sanders Selective Supplement I (MS2104), the medium is incubated at 31 to 32°C for 4 hours for the recovery of injured cells. The resuscitation and enrichment of culture must be performed in a microaerobic environment. The organism is sensitive to oxygen and storage at room temperature. The food sample should be stored in an oxygen-free environment with 0.01 % sodium bisulfite and held under refrigeration. Under these conditions the organism will survive 10 times longer than when the same strain is held in a bisulfite-free medium exposed to air at 25°C [(3)]. Some strains of normal enteric organisms may grow that are not inhibited or only partially inhibited on this medium.

Methodology

Suspend 28.35 grams of powder media in 940 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 40-45°C and aseptically add 50 ml of sterile defibrinated lysed horse blood and reconstituted contents of 1 vial of Park and Sanders Selective Supplement 1 (MS2104). Mix well. Inoculate with food samples and incubate at 31 to 32°C (to recover injured cells) for 4 hours.

Aseptically add reconstituted contents of 1 vial of Park and Sanders Selective Supplement II (MS2105) and incubate at 37°C for 2 hours, then at 42°C under a microaerobic atmosphere for additional 40 to 42 hours with agitation at 100 rpm.

Quality Control

Physical Appearance
Light yellow to beige homogeneous free flowing powder

Colour and Clarity of prepared medium
Basal medium - Light yellow coloured clear solution. After addition of 5% w/v sterile defibrinated lysed horse blood - Cherry red coloured opalescent solution in tubes

Reaction
Reaction of 2.84% aqueous solution at 25°C. pH : 7.0±0.2

pH Range 6.80-7.20

Cultural Response/Characteristics
DM 2185: Cultural characteristics observed with added 5% defibrinated lysed horse blood along with MS2104 and MS2105, after an incubation at 42°C for 48 hours under microaerobic atmosphere.

Organism	Inoculum (CFU)	Growth
Campylobacter coli ATCC 33559	50-100	good
Campylobacter jejuni ATCC 29428	50-100	Good-luxuriant
Escherichia coli ATCC 25922	>=10^3	inhibited

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Park C.E. and Sanders G.W., 1989, Abstr. 5th International Workshop on Campylobacter Infections, Puerto Vallarta, Mexico.
2. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
3. Koidis P. and Doyle M.P., 1983, Eur. J. Clin. Microbiol., 2:384.

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