SPS AGAR (SULPHITE POLYMYXIN SULFADIAZINE)

AGSP-00P-500

- **Principle**

SPS Agar (Sulphite Polymyxin Sulfadiazine) is a moderately selective medium to recover Clostridium perfringens from fresh or preserved foods and food ingredients. The medium was modified by Angelotti, incorporating sulfadiazine and polymyxin B sulphate to the more recent Mossel formula for the recovery of Clostridium perfringens.

Casein peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group. Ferric citrate and sodium sulphite are H2S indicators. *C. perfringens* reduces the sulphite to sulphide which in turn reacts with the iron and forms a black iron sulphide precipitate, seen as black colonies. Polymyxin B sulphate and sulfadiazine are inhibitors to organisms other than *Clostridium* spp. Bacteriological agar is the solidifying agent.

A few microorganisms other than *C. perfringens* also grow on SPS Agar so it is best to perform a Gram stain and look for spores. Many common microorganisms are totally or partially inhibited, but if they develop, they generally do not form black colonies nor spores, nor do they reduce nitrate and are non-motile Gram-positive vegetative bacilli.

- **Regulatory compliance**

This product is manufactured under a quality management system in accordance with ISO 9001 and ISO 13485, and its formulation and quality control comply with applicable international standards, such as ISO 11133, where relevant.

- **Composition**

Ingredients	**g/L**
Bacteriological agar	13.00
Polymyxin B sulphate	0.10
Sulfadiazine	0.12
Ferric citrate	0.50
Casein peptone	15.50
Sodium sulphite	0.50
Yeast extract	10.00

- **Preparation**

Suspend 39.7 grams of the medium in one litre of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 118 °C for 15 minutes.

- **Applications and use**

- Prepare in a homogenizer, or other equipment, the material samples and make serial dilutions.

- Dispense the inoculum into sterile Petri dish.

- Pour the medium cooled to 50-55 °C over the inoculum and mix gently the inoculum and medium.

- It can be possible to dispense the medium into tubes and inoculate them by the stab method.

- Incubate anaerobically (The authors used a mixture of 90% nitrogen and 10% CO_2) at 35±2 °C for 24-48 hours.

- The lack of motility and the capacity to reduce nitrate can be determined on Indole Nitrate Medium with 2 g/L of added agar.

- **Quality control**

Solubility	w/o rests
Appearance	Fine powder
Colour of the dehydrated medium	Beige
Colour of the prepared medium	Amber, slightly opalescent
Final pH (25 °C)	7.0 ± 0.2

- **Microbiological test**

Incubation conditions: 35±2 °C / 24-48 h

Microorganisms	ATCC	Specification	Characteristic reaction
Clostridium perfringens	13124	Good growth	Black colony
Clostridium sporogenes	19404	Moderate growth	Black colony
Escherichia coli	25922	Inhibited growth	-
Staphylococcus aureus	6538	Moderate/inhibited growth	White colony

- **Storage**

The product is highly hygroscopic; keep the container always closed and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Temp. Min.:2 °C Temp. Max.:25 °C.

Note: Sterilize media immediately after reconstitution.

- **Bibliography**

Angelotti, Nall, Foter y Lewis. Applied Microbiol. 10: 193. 1962. Mossel. J.SCI. Agr. 10: 662. 1959. Mossel de Bruin Van Diepen, Vendrig y Zoutwelle J. Applied Bact, 19: 142. 1956.

- **Product use limitation**

This product is developed, designed and supplied exclusively for research use only. It is not intended for diagnostic applications or drug development, and it is not suitable for administration to humans or animals.