Technical Information

Yeast Nitrogen Base w/o Amino Acids and Ammonium Sulphate

Product Code: DM 1151

Application:- Yeast Nitrogen Base without Amino Acids and Ammonium Sulphate is recommended for use in the classification of yeasts on the basis of their ability to assimilate nitrogen and carbon compounds.

Composition**

Ingredients	Gms / Litre
Biotin	0.000002
Calcium pantothenate	0.0004
Folic acid	0.000002
Inositol	0.002
Niacin	0.0004
p-Amino benzoic acid (PABA)	0.0002
Pyridoxine hydrochloride	0.0004
Riboflavin (Vitamin B2)	0.0002
Thiamine hydrochloride	0.0004
Boric acid	0.0005
Copper sulphate	0.00004
Potassium iodide	0.000 1
Ferric chloride	0.0002
Manganese sulphate	0.0004
Sodium molybdate	0.0002
Zinc sulphate	0.0004
Monopotassium phosphate	1.000
Magnesium sulphate	0.500
Sodium chloride	0.100
Calcium chloride	0.100
Final pH (at 25°C)	4.5±02

**Formula adjusted, standardized to suit performance

Principle & Interpretation

This medium lacks the amino acids, histidine, methionine and tryptophan and also ammonium sulphate and is used for classifying yeasts based on carbohydrate and amino acids requirements. Yeast Nitrogen Base is prepared as per the formulations of Guenter [(1)], which in turn is modification of Wickerham s formulation [(2)].

Wickerham used the following nitrogen sources - ammonium sulphate 1.0 gm/l, potassium nitrate 0.78 gm/l, urea 0.46 gm/l, asparagine 1.0 gm/l, peptone (gelatin) 1.32 gm/l. Yeasts grown on rich medium may carry a reserve of nitrogen in the form of proteins that m ay result in erroneous findings. To avoid this, 2 serial transfers in complete medium are recommended. After sufficient incubation,measure the growth turbidimetrically at 660 nm using spectrophotometer and compare with control.

Methodology

A.For Carbon Assimilation tests, prepare the broth base in 10X concentration. Dissolve 1.7 grams of powder media in 100 ml distilled water. Add 5 grams ammonium sulphate, 10 mg L-histidine, 20 mg DL-methionine and 20 mg DL-tryptophan. Carbon compounds for assimilation test are added in 10X concentration singly or in combination as required.

B.For Nitrogen Assimilation tests, prepare the medium in 10X concentration. Dissolve 1.7 grams of powder media in 100 ml distilled water. Add 1 gram dextrose, 1 mg L-histidine, 2 mg DL-methionine and 2 mg DL-tryptophan. Add nitrogen compounds for assimilation test in 10X concentration singly or in combination as required. Wickerham employed the following nitrogen sources : ammonium sulphate 1gm, potassium nitrate 0.78 gm, urea 0.46 gm, asparagine 1 gm, peptone (gelatin) 1.32 gms.

To make complete media filter sterilize mix 10X5 solution of A & B & Refrigerate and use as needed. Prepare final medium by aseptically pipetting 0.5 ml of the 10X sterile medium into 4.5 ml sterile distilled water. Mix well.

Quality Control

Physical Appearance

White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium

Colourless (at 10X concentration colour of medium is pale yellow) clear solution without any precipitate.

Reaction

Reaction of 0.17% w/v aqueous solution at 25°C. pH : 4.5±0.2

pH Range :- 4.30-4.70

Cultural Response/Characteristics

DM 1151: Cultural characteristics observed after an incubation at 35-37°C for 6-7 days.

Organism	Growth (Plain)	Growth with dextrose
Kloeckera apiculata ATCC 9774	none-poor	good
Saccharomyces cerevisiae ATCC 9763	none-poor	good
Saccharomyces uvarum ATCC 28098	None-poor	good

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. Guenter, Personal communication.
2. Wickerham L. J., 1951, U.S. Dept. Agric. Tech. Bull No. 1029.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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