



Yeast Nitrogen Base w/o Amino Acids and Ammonium Sulphate

M151

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	0.0001
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 parameters

Directions

A.For Carbon Assimilation tests, prepare the broth base in 10X concentration. Dissolve 1.7 grams 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 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.

For A and B, filter sterilize the 10X strength solution. 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.

Principle And Interpretation

Yeast Nitrogen Base without Amino Acids and Ammonium Sulphate is used for classifying yeasts based on carbohydrate and amino acids requirements. This medium lacks the amino acids, histidine, methionine and tryptophan and also ammonium sulphate. Yeast Nitrogen Base is prepared as per the formulations of Guenter (1), which in turn is modification of Wickerham's formulation (2). Yeast Nitrogen Base without Amino Acids and Ammonium Sulphate contains essential nutrients and vitamins necessary for cultivation of yeasts, except amino acids and a source of nitrogen and carbohydrates.

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 may result in erroneous findings. To avoid this, 2 serial transfers in complete medium are recommended.

Please refer disclaimer Overleaf.

After sufficient incubation, measure the growth turbidimetrically at 660 nm using spectrophotometer and compare with control.

Quality Control

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

Cultural Response

M151: Cultural characteristics observed after an incubation at 35-37°C for 6-7 days.

Organism	Growth (Plain)	Growth w/ additions
Cultural Response		
<i>Kloëckera apiculata</i> ATCC 9774	none-poor	good
<i>Saccharomyces cerevisiae</i> ATCC 9763	none-poor	good
<i>Saccharomyces uvarum</i> ATCC 28098	none-poor	good

Storage and Shelf Life

Store dehydrated powder and the prepared medium at 2 - 8°C in tightly closed container. Use before expiry date on the label.

Reference

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

Revision : 1 / 2011



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