

## NUTRIENT AGAR (7145)

### Intended Use

**Nutrient Agar** is used for the cultivation of a wide variety of microorganisms.

### Product Summary and Explanation

In the early 1900's, the American Public Health Association (APHA) suggested the formula of Nutrient Agar as a standard culture medium used in water testing.<sup>1</sup> Nutrient Agar continues to be a widely used general purpose medium for growing nonfastidious microorganisms. If required, enrichments can be added to this medium. Nutrient Agar, modified by incorporating 4-methylumbelliferyl- $\beta$ -D-glucuronide (MUG), is used for fluorogenic detection of *Escherichia coli*.<sup>2</sup>

Nutrient Agar meets APHA and Association of Official Analytical Chemists (AOAC) standard methods.<sup>2,3</sup> Nutrient Agar is specified in many standard methods procedures for the examination of food, dairy products, water, and other materials.<sup>2-5</sup>

### Principles of the Procedure

The nitrogen, carbon, vitamins, and amino acids in Nutrient Agar are provided by Enzymatic Digest of Gelatin and Beef Extract. Agar is the solidifying agent.

### Formula / Liter

Enzymatic Digest of Gelatin ..... 5 g  
 Beef Extract ..... 3 g  
 Agar ..... 15 g

Final pH: 6.8  $\pm$  0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

### Precaution

1. For Laboratory Use.

### Directions

1. Suspend 23 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.

### Quality Control Specifications

**Dehydrated Appearance:** Powder is homogeneous, free flowing, and beige.

**Prepared Appearance:** Prepared medium is trace hazy and light beige.

**Expected Cultural Response:** Cultural response on Nutrient Agar at 35  $\pm$  2°C after 18 - 24 hours incubation.

Microorganism	Approx. Inoculum (CFU)	Response
<i>Bacillus subtilis</i> ATCC® 9372	10 - 300	growth
<i>Escherichia coli</i> ATCC® 25922	10 - 300	growth
<i>Salmonella typhimurium</i> ATCC® 14028	10 - 300	growth
<i>Staphylococcus aureus</i> ATCC® 25923	10 - 300	growth
<i>Streptococcus pneumoniae</i> ATCC® 6305	10 - 300	growth
<i>Streptococcus pyogenes</i> ATCC® 19615	10 - 300	growth

The organisms listed are the minimum that should be used for quality control testing.

### **Test Procedure**

1. Inoculate medium with isolated colonies or a loopful of pure culture from broth. Streak for isolation.
2. Incubate aerobically at 35°C for 18 – 24 hours or longer if necessary.

### **Results**

Good growth of nonfastidious organisms on Nutrient Agar will appear as translucent colonies.

### **Storage**

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

### **Expiration**

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

### **Limitation of the Procedure**

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

### **Packaging**

<b>Nutrient Agar</b>	<b>Code No.</b>	<b>7145A</b>	<b>500 g</b>
		<b>7145B</b>	<b>2 kg</b>
		<b>7145C</b>	<b>10 kg</b>

### **References**

1. **American Public Health Association.** 1917. Standard methods of water analysis, 3<sup>rd</sup> ed. American Public Health Association, Washington, D.C.
2. **Eaton, A. D., L. S. Clesceri, and A. E. Greenberg (eds.).** 1995. Standard methods for the examination of water and wastewater, 19<sup>th</sup> ed. American Public Health Association, Washington, D.C.
3. **Marshall, R. T. (ed.).** 1993. Standard methods for the microbiological examination of dairy products, 16<sup>th</sup> ed. American Public Health Association, Washington, D.C.
4. **Association of Official Analytical Chemists.** 1995. Official methods of analysis of AOAC International, 16<sup>th</sup> ed. AOAC International, Arlington, VA.
5. **Vanderzant, C., and D. F. Splittstoesser (eds.).** 1992. Compendium of methods for the microbiological examination of foods, 3<sup>rd</sup> ed. American Public Health Association, Washington, D.C.

### **Technical Information**

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.