

## CASMAN MEDIUM BASE (7123)

### Intended Use

**Casman Medium Base** is used with blood for the isolation of *Haemophilus influenzae*, *Neisseria gonorrhoeae* and other fastidious microorganisms.

### Product Summary and Explanation

In 1947, Casman described an infusion-free medium enriched with 5% blood for fastidious microorganisms incubated anaerobically.<sup>1-3</sup> This medium replaced formulas containing fresh meat infusion and heated blood.<sup>1</sup> Casman adjusted the formula after experiments revealed nicotinamide disrupted the action of a blood enzyme that inactivates V factor (NAD).<sup>2</sup> The concentration of nicotinamide was lowered to support growth of *Neisseria* spp.<sup>2,3</sup>

### Principles of the Procedure

The nitrogen, vitamin, and carbon sources are provided by Enzymatic Digest of Casein, Enzymatic Digest of Animal Tissue, Yeast Enriched Peptone, and Beef Extract. Niacinamide enhances growth of *N. gonorrhoeae* and *H. influenzae* by impeding the removal of coenzyme (V factor) by nucleotidase from enriched blood. A small amount of Dextrose is added to enhance growth of pathogenic cocci, and p-Aminobenzoic Acid is a B vitamin preservative. Corn Starch is added to ensure any toxic metabolites produced are absorbed, to neutralize glucose inhibition of beta-hemolysis, and enhance growth of *Neisseria* spp.<sup>4</sup> Sodium Chloride maintains the osmotic balance of the medium. Agar is the solidifying agent.

### Formula / Liter

Enzymatic Digest of Casein .....	5 g
Enzymatic Digest of Animal Tissue.....	5 g
Yeast Enriched Peptone .....	10 g
Beef Extract.....	3 g
Niacinamide .....	0.05 g
p-Aminobenzoic Acid .....	0.05 g
Dextrose .....	0.5 g
Corn Starch .....	1 g
Sodium Chloride.....	5 g
Agar.....	13.5 g

Final pH: 7.3 ± 0.2 at 25°C

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

### Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

### Directions

1. Suspend 43 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.
4. After cooling medium to 50°C, aseptically add 5% sterile blood and 0.15% sterile water-lysed blood solution (one part blood to three parts water).

### Quality Control Specifications

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

**Prepared Appearance:** Prepared medium without blood is trace to slightly hazy and light to medium amber. Prepared medium supplemented with 5% sheep blood is opaque and red.

**Expected Cultural Response:** Cultural response on Casman Medium Base supplemented with blood at 35°C after 18 - 24 hours incubation.

Microorganism	Response
<i>Haemophilus influenzae</i> ATCC® 35056	growth
<i>Neisseria gonorrhoeae</i> ATCC® 43070	growth
<i>Neisseria meningitidis</i> ATCC® 13090	growth
<i>Streptococcus pneumoniae</i> ATCC® 6303	growth
<i>Streptococcus pyogenes</i> ATCC® 19615	growth

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

### **Test Procedure**

Refer to appropriate references for specific procedures on the isolation and identification of fastidious microorganisms.

### **Results**

Refer to appropriate references for results.

### **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.

### **Limitations of the Procedure**

1. Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.
2. Niacinamide in concentrations greater than 0.005% may inhibit growth of some *N. gonorrhoeae* strains; however, only slight stimulation of growth of *H. influenzae* occurs with this amount.<sup>1</sup>
3. Casman Medium Base is intended for use with supplementation. Although certain diagnostic tests may be performed directly on this medium, biochemical and immunological testing using pure cultures are recommended for complete identification.

### **Packaging**

<b>Casman Medium Base</b>	<b>Code No.</b>	<b>7123A</b>	<b>500 g</b>
		<b>7123B</b>	<b>2 kg</b>
		<b>7123C</b>	<b>10 kg</b>

### **References**

1. **Casman, E. P.** 1947. A noninfusion blood agar base for *Neisseriae*, *Pneumococci* and *Streptococci*. Am. J. Clin. Pathol. **27**:281.
2. **Casman, E. P.** 1942. J. Bacteriol. **43**:33.
3. **Casman, E. P.** 1947. J. Bacteriol. **53**:561.
4. **MacFaddin, J. D.** 1985. Media for the isolation-cultivation-identification-maintenance medical bacteria, vol. 1, p. 131-143. Williams & Wilkins, Baltimore, MD.

### **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.