**Intended Use**

**Bacto** Peptone is used as an organic nitrogen source in microbiological culture media for cultivation of a variety of bacteria and fungi.

**Summary and Explanation**

*Bacto* Peptone was first introduced in 1914 and became the standard peptone for the preparation of bacteriological culture media. *Bacto* Peptone is used as an organic nitrogen source in microbiological culture media for cultivation of a variety of bacteria and fungi. For example, Iwanaga et al.\(^1\) utilized *Bacto* Peptone for production of cholera toxin by *Vibrio cholerae* O1 El Tor. Benkerroum et al.\(^2\) reported using *Bacto* Peptone in a selective medium developed for isolating *Leuconostoc* sp. from food samples. *Bacto* Peptone was used in a culture medium for two anaerobic, extremely thermophilic Archaea, *Thermococcus celer* and *Pyrococcus woesei*, by Blamey et al.\(^3\)

*Bacto* Peptone has also been utilized as a nitrogen source in cell culture media formulations. Taylor et al.\(^4\) used *Bacto* Peptone to supplement serum-free medium for several mammalian cell lines and reported that the solubility of *Bacto* Peptone is very good at 10 g/100 mL water. Sakoda and Fukusho\(^5\) also utilized *Bacto* Peptone in serum-free culture medium for maintaining porcine kidney epithelial cells. *Bacto* Peptone is also useful as a supplement in cell culture with serum.

Researchers uncovered estrogenic activity associated with *Bacto* Peptone when including the peptone in medium for culture of yeast. The estrone contained in *Bacto* Peptone was converted to estriol by *Saccharomyces cerevisiae*. These findings suggest that adding estrogens to a medium containing *Bacto* Peptone for studies of estriol production by yeast may confound results.\(^6,7\)

Several media containing peptone are specified in standard methods for multiple applications.\(^8,15\)

**Principles of the Procedure**

*Bacto* Peptone is an enzymatic digest of animal protein. *Bacto* Peptone contains nitrogen in a form that is readily available for bacterial growth. *Bacto* Peptone has a high peptone and amino acid content, with only a negligible quantity of proteoses and more complex nitrogenous constituents.

**Typical Analysis**

Refer to Product Tables in the Reference Guide section of this manual.

**Directions for Preparation from Dehydrated Product**

Refer to the final concentration of *Bacto* Peptone in the formula of the medium being prepared. Add appropriate product as required.

### User Quality Control

#### Identity Specifications

**Bacto™ Peptone**

| Dehydrated Appearance | Tan, free-flowing, granules. |
| Solution: | 1.0%, 2.0% and 10.0% solutions, soluble in purified water. 1.0% solution is light amber, clear. 2.0% solution is light to medium amber, clear. 10.0% solution is medium to dark amber, clear to very slightly opalescent, may have a very slight precipitate. |
| Reaction of 1.0% Solution at 25°C: | pH 6.8-7.2 |

#### Cultural Response

**Bacto™ Peptone**

Prepare a sterile solution of *Bacto* Peptone as directed below. Adjust final pH to 7.2-7.4. Inoculate and incubate at 35 ± 2°C for 18-48 hours.

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST SOLUTION</th>
<th>ORGANISM</th>
<th>ATCC*</th>
<th>INOCULUM CFU</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fermentable Carbohydrates</td>
<td>2%</td>
<td><em>Escherichia coli</em></td>
<td>25922</td>
<td>~10(^7)</td>
<td>Negative</td>
</tr>
<tr>
<td>Indole Production</td>
<td>0.1%</td>
<td><em>Escherichia coli</em></td>
<td>29552</td>
<td>0.1 mL, undiluted</td>
<td>Positive</td>
</tr>
<tr>
<td>Acetyl methylcarbinol Production</td>
<td>0.1% with 0.5% dextrose</td>
<td><em>Enterobacter aerogenes</em></td>
<td>13048</td>
<td>0.1 mL, undiluted</td>
<td>Positive</td>
</tr>
<tr>
<td>Hydrogen Sulfide Production</td>
<td>1%</td>
<td><em>Salmonella enterica subsp. enterica</em> serotype Typhimurium</td>
<td>14028</td>
<td>0.1 mL, undiluted</td>
<td>Positive</td>
</tr>
</tbody>
</table>

#### Growth Response

**Bacto™ Peptone**

Prepare a sterile solution with 2% *Bacto* Peptone, 0.5% sodium chloride and 1.5% agar. Adjust final pH to 7.2-7.4. Inoculate and incubate plates at 35 ± 2°C for 18-48 hours.

<table>
<thead>
<tr>
<th>ORGANISM</th>
<th>ATCC*</th>
<th>INOCULUM CFU</th>
<th>RECOVERY</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em></td>
<td>25922</td>
<td>30-300</td>
<td>Good</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em></td>
<td>25923</td>
<td>30-300</td>
<td>Good</td>
</tr>
</tbody>
</table>
Procedure
See appropriate references for specific procedures using Bacto Peptone.

Expected Results
Refer to appropriate references and procedures for results.

References

Availability
Bacto™ Peptone

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>211677</td>
<td>Dehydrated – 500 g</td>
</tr>
<tr>
<td>211820</td>
<td>Dehydrated – 2 kg</td>
</tr>
<tr>
<td>211830</td>
<td>Dehydrated – 10 kg</td>
</tr>
</tbody>
</table>