**Intended Use**

*Bacto* Yeast Extract, Yeast Extract, UF (ultra-filtered), Yeast Extract, LD, *Bacto* Yeast Extract, Technical and Yeast Extract are used in preparing microbiological culture media.

**Summary and Explanation**

*Bacto* Yeast Extract, Yeast Extract, UF, Yeast Extract, LD, *Bacto* Yeast Extract, Technical and Yeast Extract are concentrates of the water-soluble portion of *Saccharomyces cerevisiae* cells that have been autolyzed. The autolysis is carefully controlled to preserve the naturally occurring B-complex vitamins. Yeast extract is considered a non-animal product and is used extensively for many non-animal formulations for bacterial, fungal, mammalian and insect cell culture.

*Bacto* Yeast Extract has been considered one of the most complete and versatile of the fermentation bionutrients available. It has been a valuable ingredient for the microbiological assay of vitamins. Yeast extract is also of value in the assay of antibiotics. B factor, a growth substance necessary for the production of rifampin in a *Nocardia* sp., can be isolated from yeast extract.¹

Yeast Extract, UF is ultra-filtered and specifically designed for tissue culture applications. With its low endotoxin level and high content of naturally occurring B vitamins, it is an ideal substitute for fetal bovine serum. It has an endotoxin level of less than or equal to 500 EU/g.

Yeast Extract, LD was created to eliminate the problem of dust inhalation when handling large quantities of yeast extract. Yeast Extract, Yeast Extract, UF and Yeast Extract, LD are processed from the same culture of *Saccharomyces*.

*Bacto* Yeast Extract, Technical and Yeast Extract were developed to provide products priced for the biotechnology/pharmaceutical market with acceptable clarity and growth promoting characteristics.

Media formulations containing yeast extract are specified in standard methods for various applications.² ³ ⁴

**Principles of the Procedure**

*Bacto* Yeast Extract, Yeast Extract, UF, Yeast Extract, LD, *Bacto* Yeast Extract, Technical and Yeast Extract are prepared by growing baker’s yeast, *Saccharomyces* sp., in a carbohydrate-rich plant medium. The yeast is harvested, washed and resuspended in water, where it undergoes autolysis, or self-digestion. Yeast extract is the total soluble portion of this autolytic action. The autolytic activity is stopped by a heating step. The resulting
yeast extract is then filtered to produce a clear product and subsequently made into a powder by a spray-drying process.

Bacto Yeast Extract, Yeast Extract, UF, Yeast Extract, LD, Bacto Yeast Extract, Technical and Yeast Extract provide vitamins, nitrogen, amino acids and carbon in microbiological culture media.

**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 Yeast Extract, Yeast Extract, UF, Yeast Extract, LD, Bacto Yeast Extract, Technical and Yeast Extract in the formula of the medium being prepared. Add appropriate product as required.

**Procedure**
See appropriate references for specific procedures using Bacto Yeast Extract, Yeast Extract, UF, Yeast Extract, LD, Bacto Yeast Extract, Technical and Yeast Extract.

**Expected Results**
Refer to appropriate references and procedures for results.
Yeast Extract Glucose Chloramphenicol Agar

Intended Use
Yeast Extract Glucose Chloramphenicol Agar is a selective agar recommended by the International Dairy Federation1,2 for enumerating yeasts and molds in milk and milk products.

Summary and Explanation
The antibiotic method for enumerating yeasts and molds in dairy products has become the method of choice, replacing the traditional acidified method.2 The use of antibiotics for suppressing bacteria results in better recovery of injured fungal cells, which are sensitive to an acid environment, and in less interference from precipitated food particles during the counting.3-7

Yeast Extract Glucose Chloramphenicol Agar is a nutrient medium that inhibits the growth of organisms other than yeasts and molds due to the presence of chloramphenicol. When a sample contains predominantly yeasts and/or injured yeasts, the use of Yeast Extract Glucose Chloramphenicol Agar may offer some advantage.2 After incubation at 25°C, colonies are counted and yeast colonies are distinguished from molds by colony morphology.

Principles of the Procedure
Yeast extract provides basic nutrients. Glucose is a carbon energy source. Chloramphenicol inhibits bacterial growth. Agar is the solidifying agent.

Formula
Difco™ Yeast Extract Glucose Chloramphenicol Agar

Approximate Formula* Per Liter
Yeast Extract .......................................................... 5.0 g
Glucose ................................................................. 20.0 g
Chloramphenicol ..................................................... 0.1 g
Agar ................................................................. 13.0 g

*Adjusted and/or supplemented as required to meet performance criteria.

Directions for Preparation from Dehydrated Product
1. Suspend 38.1 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes.
4. Test samples of the finished product for performance using stable, typical control cultures.