

## Bacto™ TC Lactalbumin Hydrolysate

### Intended Use

**Bacto** TC Lactalbumin Hydrolysate is used for preparing bacterial, insect and mammalian cell culture media.

### Summary and Explanation

**Bacto** TC Lactalbumin Hydrolysate is intended as a nutritional supplement for bacterial, insect and mammalian cell culture. For years, TC Lactalbumin Hydrolysate has been used as a nutritional source for lactobacilli. It is also useful for indole testing because of its high tryptophan content. TC Lactalbumin Hydrolysate is frequently used in mammalian cell culture media as an amino acid supplement.<sup>1</sup>

### User Quality Control

#### Identity Specifications

##### **Bacto™ TC Lactalbumin Hydrolysate**

Dehydrated Appearance: Buff to tan, free-flowing, homogeneous powder.

Solution: 1.0% solution, soluble in purified water. Solution is very light to light amber, clear.

#### Cultural Response

##### **Bacto™ TC Lactalbumin Hydrolysate**

Prepare a sterile solution containing TC Hanks solution with 0.5% **Bacto** TC Lactalbumin Hydrolysate and 10% fetal calf serum in tissue culture flasks. Prepare a second sterile solution containing TC Medium 199 with 0.5% **Bacto** TC Lactalbumin Hydrolysate and 2.5% fetal calf serum in tissue culture flasks. Inoculate flasks with epithelial and fibroblast cell lines. Assay cell growth is comparable to approved control after 7 days of incubation at 35 ± 2°C.

### Principles of the Procedure

**Bacto** TC Lactalbumin Hydrolysate is the enzymatically hydrolyzed protein portion of milk whey. In recent years, whey proteins have gained increased recognition as a complete protein source.<sup>2</sup> This product is a mixture of peptides, amino acids, carbohydrates, simple and complex.

### 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** TC Lactalbumin Hydrolysate in the formula of the medium being prepared. Add product as required.

### Procedure

See appropriate references for specific procedures using **Bacto** TC Lactalbumin Hydrolysate.

### Expected Results

Refer to appropriate references and procedures for results.

### References

1. Bridson and Brecker. 1970. *Methods in Microbiology* 3A:248.
2. Burrington. 2002. *The Dairy Pipeline*. 14:1.

### Availability

#### **Bacto™ TC Lactalbumin Hydrolysate**

Cat. No. 259962 Dehydrated – 500 g  
259961 Dehydrated – 10 kg

## Bacto™ TC Yeastolate • TC Yeastolate, UF

### Intended Use

**Bacto** TC Yeastolate and TC Yeastolate, UF (ultra-filtered) are used for preparing bacterial, insect and mammalian cell culture media.

### Summary and Explanation

Both **Bacto** TC Yeastolate and TC Yeastolate, UF are intended as nutritional supplements for bacterial, insect and mammalian cell culture. For years, TC Yeastolate has been used in insect cell nutrition. TC Yeastolate was found to be a very versatile supplement to enhance growth and production characteristics of Sf9 and High-Five cells.<sup>1-5</sup>

### Principles of the Procedure

**Bacto** TC Yeastolate and TC Yeastolate, UF are animal-free, water-soluble portions of autolyzed *Saccharomyces cerevisiae*. Both products are a mixture of peptides, amino acids, carbohydrates, simple and complex, as well as vitamins. TC

Yeastolate, UF has been ultra-filtered at a 10,000 MWCO (molecular weight cut-off). It has an endotoxin value of less than 500 EU/g.

### 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** TC Yeastolate or TC Yeastolate, UF in the formula of the medium being prepared. Add appropriate product as required.

### Procedure

See appropriate references for specific procedures using **Bacto** TC Yeastolate or TC Yeastolate, UF.

## User Quality Control

### Identity Specifications

#### Bacto™ TC Yeastolate

Dehydrated Appearance:	Beige, free-flowing, homogeneous fine powder.
Solution:	0.1% and 0.2% solutions, soluble in TC Medium 199. Solutions, after the addition of 10% sodium bicarbonate to adjust the pH to 7.0-7.2, are orange-red, clear.

#### Difco™ TC Yeastolate, UF

Dehydrated Appearance:	Free-flowing, homogeneous fine powder.
Solution:	0.1% and 0.2% solutions, soluble in TC Medium 199.
Reaction of 0.1% and 0.2% Solutions at 25°C:	pH 5.4-7.2

### Cultural Response

#### Bacto™ TC Yeastolate

Prepare a sterile solution containing TC Medium 199 with 0.1% Bacto TC Yeastolate and 5% fetal calf serum in tissue culture flasks. Inoculate flasks with epithelial and fibroblast cell lines and observe for toxicity. No toxicity should be evident after two passages and at least 14 days of incubation at 35 ± 2°C.

## Expected Results

Refer to appropriate references and procedures for results.

## References

- Chan, Greenfield and Reid. 1998. *Biotechnol. Bioeng.* 59:178.
- Nguyen, Jarnagin, Williams, Chan and Barnett. 1993. *J. Biotechnol.* 31:205.
- Ikonomou, Bastin, Schneider and Agathos. 2001. *In Vitro Cell Dev. Biol. Anim.* 37:549.
- Bedard, Kamen, Tom and Maassie. 1994. *Cytotechnology* 15:129.
- Donalson and Shuler. 1998. *Biotechnology Prog.* 14:573.

## Availability

#### Bacto™ TC Yeastolate

Cat. No.	255772	Dehydrated – 100 g
	255771	Dehydrated – 10 kg

#### Difco™ TC Yeastolate, UF

Cat. No.	292804	Dehydrated – 500 g
	292805	Dehydrated – 10 kg

# TCBS Agar

## Intended Use

Thiosulfate Citrate Bile Salts Sucrose Agar (TCBS Agar) is used for the selective isolation of cholera vibrios and *Vibrio parahaemolyticus* from a variety of clinical and nonclinical specimens.<sup>1,2</sup>

## Summary and Explanation

*Vibrio* species are most widely recognized for their role in human intestinal infections. Diarrheas caused by *Vibrio cholerae* and *V. parahaemolyticus* are important worldwide.<sup>3</sup> The isolation of *Vibrio* species has been enhanced by the development of media which are highly selective for vibrios.

TCBS is the primary plating medium universally used for the selective isolation of vibrios that cause cholera, diarrhea and food poisoning. It was developed by Kobayashi et al.<sup>4</sup>, who modified the selective medium of Nakanishi.<sup>5</sup> The combination of alkaline peptone water and TCBS Agar is used in many procedures for the isolation of *V. cholerae* and other *Vibrio* species from feces.<sup>1-3,6,7</sup>

TCBS Agar Deep (pour tubes) are provided in a 20 mL fill so that the medium may be liquefied and poured into a Petri dish. This provides a convenient source of medium with a longer shelf-life than pre-poured plated media.

## Principles of the Procedure

TCBS Agar is highly selective for the isolation of *V. cholerae* and *V. parahaemolyticus* as well as other vibrios. Inhibition

of gram-positive bacteria is achieved by the incorporation of oxgall, which is a naturally occurring substance containing a mixture of bile salts, and sodium cholate, a pure bile salt. Sodium thiosulfate serves as a sulfur source and, in combination with ferric citrate, detects hydrogen sulfide production. Saccharose (sucrose) is included as a fermentable carbohydrate for the metabolism of vibrios. The alkaline pH of the medium enhances the recovery of *V. cholerae*. Thymol blue and bromthymol blue are included as indicators of pH changes.

## Formula

#### Difco™ TCBS Agar

Approximate Formula* Per Liter	
Yeast Extract .....	5.0 g
Proteose Peptone No. 3 .....	10.0 g
Sodium Citrate .....	10.0 g
Sodium Thiosulfate .....	10.0 g
Oxgall .....	8.0 g
Saccharose .....	20.0 g
Sodium Chloride .....	10.0 g
Ferric Ammonium Citrate .....	1.0 g
Bromthymol Blue .....	0.04 g
Thymol Blue .....	0.04 g
Agar .....	15.0 g

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

## Directions for Preparation from Dehydrated Product

- Suspend 89 g of the powder in 1 L of purified water. Mix thoroughly.
- Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.