

TAT Broth Base • TAT Broth

Intended Use

This medium conforms with specifications of *The United States Pharmacopeia (USP)*.

TAT Broth Base with added polysorbate 20 and TAT Broth (complete) are used for cultivating microorganisms from highly viscous or gelatinous materials.

Summary and Explanation

TAT (Tryptone-Azolecetin-Tween™*) Broth Base with the addition of polysorbate 20 is recommended for testing for the presence of microorganisms in viscous materials, such as salves or ointments. It is especially adapted to the testing of cosmetics. Cosmetics and pharmaceutical products are subject to contamination during manufacturing and use by consumers.¹ Preservatives are used in aqueous products to make them self-sterilizing for vegetative bacteria, yeasts and molds, and bacteriostatic or bactericidal for spores.¹ TAT Broth is the medium, including polysorbate 20, provided in bottles.

TAT Broth is an enrichment medium developed to isolate and cultivate microorganisms. TAT Broth conforms to the formula specified for Fluid Casein Digest-Soy Lecithin-Polysorbate 20 Medium by the *USP* for use in Microbial Limit Tests.²

*Tween is a trademark of ICI Americas, Inc.

User Quality Control

Identity Specifications

Difco™ TAT Broth Base

| | |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dehydrated Appearance: | Beige, free-flowing, homogeneous. |
| Solution: | 2.5% solution with 4% polysorbate 20. Soluble when heated to 50-60°C; let stand for 15-30 minutes with occasional agitation to dissolve prior to autoclaving. Solution is light amber, clear to very slightly opalescent with a very slight precipitate. |
| Prepared Appearance: | Light amber, clear to very slightly opalescent. |
| Reaction of 2.5% Solution with 4% Polysorbate 20 at 25°C: | pH 7.2 ± 0.2 |

Cultural Response

Difco™ TAT Broth

Prepare the medium per label directions or use prepared TAT Broth. Inoculate and incubate at 35 ± 2°C for 18-48 hours.

| ORGANISM | ATCC™ | INOCULUM CFU | RECOVERY |
|--------------------------------------------------------------------------|-------|----------------------------------|--------------|
| <i>Bacillus subtilis</i> | 6633 | 10 ² -10 ³ | Good |
| <i>Candida albicans</i> | 26790 | 10 ² -10 ³ | Fair to good |
| <i>Pseudomonas aeruginosa</i> | 27853 | 10 ² -10 ³ | Good |
| <i>Salmonella choleraesuis</i> subsp. <i>choleraesuis</i> serotype Typhi | 6539 | 10 ² -10 ³ | Good |
| <i>Staphylococcus aureus</i> | 25923 | 10 ² -10 ³ | Good |

Principles of the Procedure

Peptone provides the nitrogen, vitamins, amino acids and carbon in TAT Broth Base. Soy lecithin and polysorbate 20 neutralize preservatives in the cosmetics or pharmaceutical products, allowing bacteria to grow.

Formulae

Difco™ TAT Broth Base

| | |
|-----------------------------------|--------|
| Approximate Formula* Per 960 mL | |
| Pancreatic Digest of Casein | 20.0 g |
| Soy Lecithin | 5.0 g |

Difco™ TAT Broth (prepared)

| | |
|-----------------------------------|---------|
| Approximate Formula* Per Liter | |
| Pancreatic Digest of Casein | 20.0 g |
| Soy Lecithin | 5.0 g |
| Polysorbate 20 | 40.0 mL |

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

Directions for Preparation from Dehydrated Product

1. Suspend 25 g of the powder in 960 mL of purified water.
2. Add 40 mL of polysorbate 20.
3. Heat in a water bath at 50-60°C for 15-30 minutes with occasional agitation to dissolve completely.
4. Autoclave at 121°C for 15 minutes.
5. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

1. Add 10 g or 10 mL of an undiluted sample to 90 mL of complete medium and agitate to obtain an even suspension.
2. Incubate at 35 ± 2°C for 18-48 hours.

For a complete discussion on microbial limit testing refer to appropriate procedures in the *USP*.²

Expected Results

Tubes or bottles exhibiting growth should be subcultured for identification.

References

1. Orth. 1993. Handbook of cosmetic microbiology. Marcel Dekker, Inc., New York, N.Y.
2. United States Pharmacopeial Convention, Inc. 2001. The United States pharmacopeia 25/The national formulary 20 - 2002. United States Pharmacopeial Convention, Inc., Rockville, Md.

Availability

Difco™ TAT Broth Base

USP
Cat. No. 298410 Dehydrated - 500 g

Difco™ TAT Broth

USP
Cat. No. 290721 Bottle (wide mouth) - 10 × 90 mL