

BROTHS AND MEDIA

IBI now offers high quality growth media products designed specifically for today's critical microbiology and molecular biology applications. In the molecular biology and microbiology laboratories growth media is used for the cultivation of yeast and bacteria. Certain microorganisms require specific nutrients in order to manufacture the targeted molecule during replication, such as DNA or RNA. Specific vitamins may also be required for specific enzymes to function. IBI growth media products start with raw materials sourced only from North America and European suppliers, this insures the highest lot-to-lot quality and consistency that users have come to expect from IBI products.

PHYSICAL SPECIFICATIONS

CAS#: Blend
pH (@25.0°C): 7.0 ± 0.2

FORMULA PER LITER

Casein Digest Peptone: 10.0gm
Sodium Chloride: 10.0gm
Yeast Extract: 5.0gm

PREPARATION

- Mix 25.0gm of the medium in 1L of purified water until evenly dispersed.
- Heat with repeated stirring and boil for 1 minute to dissolve completely.
- Distribute and autoclave at 121.0°C for 15 minutes.

APPLICATIONS

- IBI's Luria Broth (LB Miller) is used in molecular genetic studies, as well as maintaining and propagating E.coli in molecular and microbiology procedures. The inclusion of casein peptone and yeast extract supply essential growth factors; such as nitrogen, sulfur, minerals, and vitamins. Sodium chloride provides essential electrolytes.

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture and light.

ORDERING INFORMATION

CATALOG# DESCRIPTION

IB49010	LB MILLER BROTH-25GM
IB49020	LB MILLER BROTH-500GM
IB49030	LB MILLER BROTH-2KG
IB49040	LB MILLER BROTH-10KG



PHYSICAL SPECIFICATIONS

CAS#: Blend
pH (@25.0°C): 7.0 ± 0.2

FORMULA PER LITER

Casein Digest Peptone: 10.0gm
Sodium Chloride: 10.0gm
Yeast Extract: 5.0gm
Agar: 15.0gm

PREPARATION

- Mix 40.0gm of the medium in 1L of purified water until evenly dispersed.
- Heat with repeated stirring and boil for 1 minute to dissolve completely.
- Distribute and autoclave at 121.0°C for 15 minutes.

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture & light.

ORDERING INFORMATION

CATALOG# DESCRIPTION

IB49100	MILLERS LB AGAR-500GM
IB49101	MILLERS LB AGAR-2KG
IB49102	MILLERS LB AGAR-10KG

APPLICATIONS

- IBI's Luria Agar is used in molecular genetic studies, as well as maintaining and propagating E.coli in molecular and microbiology procedures. The inclusion of casein peptone and yeast extract supply essential growth factors, such as nitrogen, carbon, sulfur, minerals, and vitamins. Sodium chloride provides essential electrolytes. Agar is used as a solidification agent.

PHYSICAL SPECIFICATIONS

CAS#: Blend
pH (@25.0°C): 7.0 ± 0.2

FORMULA PER LITER

Casein Digest Peptone: 10.0gm
Sodium Chloride: 5.0gm
Yeast Extract: 5.0gm

PREPARATION

- Mix 20.0gm of the medium in 1L of purified water until evenly dispersed.
- Heat with repeated stirring and boil for 1 minute to dissolve completely.
- Distribute and autoclave at 121.0°C for 15 minutes.

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture and light.

ORDERING INFORMATION

CATALOG# DESCRIPTION

IB49110	LB LENNOX BROTH-20GM
IB49111	LB LENNOX BROTH-500GM
IB49112	LB LENNOX BROTH-2KG
IB49113	LB LENNOX BROTH-10KG

APPLICATIONS

- IBI's LB Lennox Broth is used in molecular genetic studies. It is a nutritionally rich media for the growth and maintenance of pure cultures of recombinant strains of E.coli. The inclusion of casein peptone and yeast extract supply essential growth factors, such as nitrogen, carbon, sulfur, minerals and vitamins. Sodium chloride also provides essential electrolytes.

BROTHS AND MEDIA

MICROBIOLOGY
PRODUCTS

ORDERING INFORMATION

CATALOG#	DESCRIPTION
IB49120	LB AGAR LENNOX-500GM
IB49121	LB AGAR LENNOX-2Kg
IB49122	LB AGAR LENNOX-10Kg



PHYSICAL SPECIFICATIONS

CAS#: Blend
pH (@25.0°C): 7.0 ± 0.2

FORMULA PER LITER

Casein Digest Peptone: 10.0gm
Sodium Chloride: 5.0gm
Yeast Extract: 5.0gm
Agar: 15.0gm

PREPARATION

- Mix 35.0gm of the medium in 1L of purified water until evenly dispersed.
- Heat with repeated stirring and boil for 1 minute to dissolve completely.
- Distribute and autoclave at 121.0°C for 15 minutes.

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture and light.

APPLICATIONS

- IBI's LB Agar Lennox is used in molecular genetic studies. It is a nutritionally rich media for the growth and maintenance of pure cultures of recombinant strains of E.coli. The inclusion of casein peptone and yeast extract supply essential growth factors, such as nitrogen, carbon, sulfur, minerals, and vitamins. Sodium chloride also provides essential electrolytes. Agar is used as a solidification agent.

ORDERING INFORMATION

CATALOG#	DESCRIPTION
IB49130	TODD-HEWITT BROTH-30GM
IB49131	TODD-HEWITT BROTH-500GM
IB49132	TODD-HEWITT BROTH-2Kg
IB49133	TODD-HEWITT BROTH-10Kg

APPLICATIONS

- IBI's Todd-Hewitt Broth is intended for the cultivation and serological typing of Group A hemolytic streptococci. Todd-Hewitt broth is formulated according to Updyke and Nickels modification of the medium originally described by Todd-Hewitt. Studies comparing various commercial broth formulas, dehydrated Todd-Hewitt broth and broth prepared from fresh infusion of beef heart, showed that the dehydrated Todd-Hewitt Broth performed equally well to the fresh infusion and superior to the other commercially prepared products. Todd-Hewitt broth is composed of beef heart infusion, yeast extract, and casein, which are excellent nutritional components. The formation of protease is prevented allowing the production of type specific M protein. Dextrose is a source of carbon and energy, and is fermented by the streptococci. The acid by-products of the fermentation are neutralized by the presence of sodium carbonate and sodium phosphate.

PHYSICAL SPECIFICATIONS

CAS#: Blend
pH (@25.0°C): 7.8 ± 0.2

FORMULA PER LITER

Beef Heart Infusion: 3.1gm
Dextrose: 2.0gm
Disodium Phosphate: 0.4gm
Yeast Enriched Peptone: 20.0gm
Sodium Chloride: 2.0gm
Sodium Carbonate: 2.5gm

PREPARATION

- Mix 30.0gm of the medium in 1L of purified water until evenly dispersed.
- Heat with repeated stirring to dissolve completely.
- Distribute and autoclave at 121.0°C for 15 minutes.

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture and light.

ORDERING INFORMATION

CATALOG#	DESCRIPTION
IB49140	TERRIFIC BROTH-500GM
IB49141	TERRIFIC BROTH-2Kg
IB49142	TERRIFIC BROTH-10Kg

APPLICATIONS

- IBI's Terrific Broth is used with Glycerol in cultivating recombinant strains of E.coli. Terrific broth is a highly enriched medium for improving yield in plasmid bearing E.coli. Recombinant strains have an extended growth phase in the medium. The addition of tryptone and yeast extract in the medium will allow higher plasmid yield per volume. Glycerol is used as a carbohydrate source in this formulation. Unlike glucose, glycerol is not fermented to acetic acid.

PHYSICAL SPECIFICATIONS

CAS#: Blend
pH (@25.0°C): 7.8 ± 0.2

FORMULA PER LITER

Casein Digest Peptone: 12.0gm
Yeast Extract: 24.0gm
Potassium Phosphate, Monobasic: 2.3gm
Potassium Phosphate, Dibasic: 12.5gm

PREPARATION

- Mix 50.8gm of the medium in 1L of purified water until evenly dispersed.
- Add 4ml of Glycerol to the mixture and evenly disperse.
- Heat with repeated stirring to dissolve completely.
- Distribute and autoclave at 121.0°C for 15 minutes.

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture and light.

BROTHS AND MEDIA

PHYSICAL SPECIFICATIONS

CAS#: Blend
pH (@25.0°C): 7.8 ± 0.2

FORMULA PER LITER

Casein Digest Peptone: 12.0gm
Yeast Extract: 24.0gm
Potassium Phosphate, Monobasic: 2.3gm
Potassium Phosphate, Dibasic: 12.5gm

PREPARATION

- Mix 50.8gm of the medium in 1L of purified water until evenly dispersed.
- Add 4ml of Glycerol to the mixture and evenly disperse.
- Heat with repeated stirring to dissolve completely.
- Distribute and autoclave at 121.0°C for 15 minutes.

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture and light.

PHYSICAL SPECIFICATIONS

CAS#: 8013-01-2
pH (@25.0°C): 6.87 ± 0.2
Clarity (1% solution, NTU): 1.5
Ash: 10.6%
Moisture: <5.0%
Filterability (g/cm²): 2.7

MOLECULAR BIOLOGY SPECIFICATIONS

Carbohydrate Total: 17.9%
Nitrogen Total: 10.9%
Amino Nitrogen Total: 6.1%
ANTN Total: 55.0

BIOLOGICAL TESTING (CFU/G)

Coliform: Negative
Salmonella: Negative
Spore Count: 10
Standard Plate Count: 100
Thermophile Count: 5

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture and light.

PHYSICAL SPECIFICATIONS

CAS#: 9002-18-0
pH (@20.0°C): 5.9
Ash: 4.0%
Acid-insoluble ash: <0.5%
Moisture: 9.3%
Gel Strength(g/cm²): 500
Gelling Point: 34.7°C ± 0.5°C

MOLECULAR BIOLOGY SPECIFICATIONS

Total Plate Count: <5000 per gm
Coliforms: <3 per gm
E.Coli: 0 per gm
Salmonella: 0 per gm
Yeast & Mold: <200 per gm

STORAGE

- Store at room temperature, Keep tightly sealed, Protect from moisture & light.

ORDERING INFORMATION

CATALOG# DESCRIPTION

IB49150 TRYPTOSE PHOSPHATE BROTH-29.5GM
IB49151 TRYPTOSE PHOSPHATE BROTH-500GM
IB49152 TRYPTOSE PHOSPHATE BROTH-2KG
IB49153 TRYPTOSE PHOSPHATE BROTH-10KG

APPLICATIONS

- IBI's Tryptose Phosphate Broth is a medium recommended for the cultivation of fastidious microorganisms. Tryptose phosphate broth is a buffered broth which can support the growth fastidious streptococci and meningococci. The addition of 0.1 agar concentration can aid in the recovery of obligate anaerobes. Tryptose peptone and dextrose are a source of carbon, organic nitrogen, and energy. Sodium chloride contributes to osmotic equilibrium, and disodium phosphate is a buffering agent.

ORDERING INFORMATION

CATALOG# DESCRIPTION

IB49160 YEAST EXTRACT-500GM
IB49161 YEAST EXTRACT-1KG
IB49162 YEAST EXTRACT-5KG



APPLICATIONS

- IBI's Yeast Extract is used in preparing microbiological culture media. Yeast Extract is the water soluble portion of autolyzed yeast. The autolysis is carefully controlled to preserve the naturally occurring B-complex vitamins. It is an excellent stimulator of bacterial growth and is used in culture media in place of, or in addition to, beef extract.

ORDERING INFORMATION

CATALOG# DESCRIPTION

IB49170 BACTERIOLOGICAL AGAR - 500GM
IB49171 BACTERIOLOGICAL AGAR - 1KG
IB49172 BACTERIOLOGICAL AGAR - 2.5KG



APPLICATIONS

- IBI's Bacteriological Agar is used as a solidification agent in the preparation of microbiological culture media. Granulated agar is a water soluble colloidal extract from certain species of marine red algae; including Gelidium, Pterocladia, and Gracilaria. Impurities, debris, minerals, and pigments are reduced to specific levels during manufacture. The majority of microorganisms cannot digest agar, thus making it an excellent solidifying agent. Granulated agar may also be used for general microbiological purposes where clarity is not a strict requirement.

	Snowflake	- Frozen Storage Required
	Thermometer	- Refrigerated Storage Required
	Diamond	- Hazardous Materials

TUNAIR SHAKE FLASKS

MICROBIOLOGY
PRODUCTS

The TUNAIR™ Shake Flask Systems are a unique and patented flask and closure system, designed for microbiology and biotechnology applications. This system provides optimum growth conditions for aerobic microorganisms, mammalian cells, and plant cells. They also provide better culture growth and productivity than standard Erlenmeyer flasks. The TUNAIR™'s high oxygen absorption rate is due to the unique baffling and turbo-vane closure design. The TUNAIR™ systems are designed to increase the availability of dissolved oxygen as well as improve cell yields. There are three (3) flask designs available depending on your application; the No-Baffle (normal throw), the Half-Baffle (vortex motion), and Full-Baffle (propeller motion). The slip on cap and filter linings protect the flask neck from airborne particles and eliminates the need for flaming. All TUNAIR™ flasks, caps, and linings can be sterilized by autoclaving.

ORDERING INFORMATION

CATALOG# DESCRIPTION

SS-7001 TUNAIR™ SAMPLE KIT-1 KIT

SS-7001 sample kit comes complete with one (1) polypropylene 300ml no-baffle flask, one (1) polypropylene 300ml Half-Baffle flask, one (1) polypropylene 300ml full-baffle flask, three (3) 300ml two piece caps, one (1) 300ml silicone cap lining, two (2) 300ml Dri-Gauze cap lining, one (1) polypropylene 2.5L full-baffle flask, one (1) 2.5L two piece cap, one (1) 2.5L silicone cap lining.

ORDERING INFORMATION

CATALOG# DESCRIPTION

SS-3014 CAP, TWO PIECE (300ML FLASK)-1EA.

SS-3015 CAP, TWO PIECE (2.5L FLASK)-1EA.

TUNAIR™ caps are available in four convenient colors; red, blue, green, and yellow!



The two piece cap assemblies are constructed of polypropylene, and are resistant to most solvents. All caps and flasks are fully autoclavable prior to reuse, and filter linings can also be autoclaved or simply replaced. To replace the filter lining in the cap assembly simply pinch the flanges of the inner-closure shell until they snap loose, then pull apart and remove used lining. Replace the lining by sandwiching it between the two parts of the cap and snap the cap back together. When reassembling the cap, ensure the flanges from the inner piece snap into the mated grooves in the outer piece. This will ensure the cap assembly stays together during use.

ORDERING INFORMATION

CATALOG# DESCRIPTION

SS-3016 SILICONE MEMBRANE CAP LININGS (300ML FLASK)-5 PACK

SS-3017 SILICONE MEMBRANE CAP LININGS (2.5L FLASK)-5 PACK

SS-3018 DRI-GAUZE CAP LININGS (300ML FLASK)-5 PACK

SS-3019 DRI-GAUZE CAP LININGS (2.5L FLASK)-5 PACK

All IBI TUNAIR™ filter linings are 0.22 micron, and are available in silicone or nitrocellulose membranes.

TUNAIR™ flasks were compared to conventional flasks using four different types of microorganisms; *Escherichia coli*, *Saccharomyces cerevisiae*, *Penicillium avellaneum*, and *Streptomyces chartreusis*. The aeration capacities of the shake flasks were determined by the sulfate oxidation method, and the values shown below are presented as oxygen absorption rate (OAR) in mM oxygen/L/Min. The growth rates of *E.coli* and *S.cerevisiae* were expressed as optical densities (OD) at 555mM. For *S.chartreusis* and *P.avellaneum* growth rates were evaluated by percent sedimentation. For *E.coli* and *S.cerevisiae*, the growth rates were determined after an 18 hour incubation period; for *S.chartreusis*, a 24 hour incubation period; and for *P.avellaneum*, a 72 hour incubation period. Growth and OAR evaluations were carried out with 3-9 replicates and statistically analyzed using Turkey's w-procedure. See results below. . .

GROWTH EVALUATION OF FOUR (4) MICROBIAL TYPES IN TUNAIR™ FLASKS VS. OTHER CURRENTLY USED SHAKE FLASKS

	OAR Value mM O ₂ /L/Min	OD @ 555mM		% Sedimentation	
		E.coli	S.cerevisiae	S.chartreusis	P.aveilaneum
TUNAIR™ Full-Baffle	4.25	7.09	5.63	19.70	3.3M
TUNAIR™ Half-Baffle	1.22	5.36	5.57	27.73	30.50P
Triple Indented Flasks	2.47	5.97	5.31	19.20	9.50MP
Unbaffled Erlenmeyer	0.52	5.97	5.19	17.37	25.10P

*Growth morphology: M, mycelial; P, pellet; MP, mixed mycelial. The mycelial growths mostly adhered to the walls of flask, which accounted for the low overall sedimentation value.

TUNAIR SHAKE FLASKS

ORDERING INFORMATION

CATALOG#	DESCRIPTION
SS-2011	300ML NO-BAFFLE SHAKE FLASK-1EA.
SS-4001	300ML NO-BAFFLE SHAKE FLASK-4 PACK
SS-2001C	300ML NO-BAFFLE FLASK KIT (DRI-GAUZE LININGS)-1 KIT
SS-2001S	300ML NO-BAFFLE FLASK KIT (SILICONE LININGS)-1 KIT

SS-2001C & SS-2001S flask kits come complete with twelve (12) polypropylene 300ml No-Baffle flasks, twelve (12) two piece caps, and five (15) filter linings.

WORKING VOLUMES

300ml Flasks 100ml
2.5L Flasks. 1L



ORDERING INFORMATION

CATALOG#	DESCRIPTION
SS-2012	300ML HALF-BAFFLE SHAKE FLASK-1EA.
SS-4002	300ML HALF-BAFFLE SHAKE FLASK-4 PACK
SS-2002C	300ML HALF-BAFFLE FLASK KIT (DRI-GAUZE LININGS)-1 KIT
SS-2002S	300ML HALF-BAFFLE FLASK KIT (SILICONE LININGS)-1 KIT

SS-2002C & SS-2002S flask kits come complete with twelve (12) polypropylene 300ml Half-Baffle flasks, twelve (12) two piece caps, and five (15) filter linings.

DIMENSIONS

Flask Size	Base Dia.	Neck Dia.	Height	Weight
300ml	3.25" [8.25cm]	1.75" [4.45cm]	6.00" [15.24cm]	.011bs [.004Kg]
2.5L	6.50" [16.51cm]	3.00" [7.62cm]	10.75" [27.31cm]	.021bs [.008Kg]

ORDERING INFORMATION

CATALOG#	DESCRIPTION
SS-2013	300ML FULL-BAFFLE SHAKE FLASK-1EA.
SS-4003	300ML FULL-BAFFLE SHAKE FLASK-4 PACK
SS-2003C	300ML FULL-BAFFLE FLASK KIT (DRI-GAUZE LININGS)-1 KIT
SS-2003S	300ML FULL-BAFFLE FLASK KIT (SILICONE LININGS)-1 KIT

SS-2003C & SS-2003S flask kits come complete with twelve (12) polypropylene 300ml Full-Baffle flasks, twelve (12) two piece caps, and five (15) filter linings.

CLEANING

All TUNAIR™ flasks and caps can be cleaned by soaking in water with a light detergent (e.g. Joy) solution to loosen dirt and contaminants, air dry. All TUNAIR™ flasks and caps can be autoclaved, if required.

MIXING

No-Baffle (0 Baffles) Normal Throws
Half-Baffle (2 Baffles) Vortex Motion
Full-Baffle (6 Baffles) Propeller Motion

ORDERING INFORMATION

CATALOG#	DESCRIPTION
SS-5011	2.5L NO-BAFFLE SHAKE FLASK-1EA.
SS-8001	2.5L NO-BAFFLE SHAKE FLASK-4 PACK
SS-6001C	2.5L NO-BAFFLE FLASK KIT (DRI-GAUZE LININGS)-1 KIT
SS-6001S	2.5L NO-BAFFLE FLASK KIT (SILICONE LININGS)-1 KIT

SS-6001C & SS-6001S flask kits come complete with four (4) polypropylene 2.5L No-Baffle flasks, four (4) two piece caps, and five (5) filter linings.

MATERIAL

All TUNAIR™ flasks and caps are constructed of chemical resistant polypropylene. All flasks and caps are fully autoclavable.



ORDERING INFORMATION

CATALOG#	DESCRIPTION
SS-5012	2.5L HALF-BAFFLE SHAKE FLASK-1EA.
SS-8002	2.5L HALF-BAFFLE SHAKE FLASK-4 PACK
SS-6002C	2.5L HALF-BAFFLE FLASK KIT (DRI-GAUZE LININGS)-1 KIT
SS-6002S	2.5L HALF-BAFFLE FLASK KIT (SILICONE LININGS)-1 KIT

SS-6002C & SS-6002S flask kits come complete with four (4) polypropylene 2.5L Half-Baffle flasks, four (4) two piece caps, and five (5) filter linings.

SHAKER SPEED

1" Throws 150-200rpm
2" Throws 300-400rpm or possibly higher

ORDERING INFORMATION

CATALOG#	DESCRIPTION
SS-5013	2.5L FULL-BAFFLE SHAKE FLASK-1EA.
SS-8003	2.5L FULL-BAFFLE SHAKE FLASK-4 PACK
SS-6003C	2.5L FULL-BAFFLE FLASK KIT (DRI-GAUZE LININGS)-1 KIT
SS-6003S	2.5L FULL-BAFFLE FLASK KIT (SILICONE LININGS)-1 KIT

SS-6003C & SS-6003S flask kits come complete with four (4) 2.5L polypropylene Full-Baffle flasks, four (4) two piece caps, and five (5) filter linings.