



# CultiControl™

## Technical Sheet 01

### **CultiControl™** freeze-dried microorganisms

Packaging: 1 vial containing 5 pellets

Non-enumerated CFU

Applications: Culture purposes, QC of ID devices, QC of AST devices

### **Quanti-CultiControl™** freeze-dried microorganisms

Packaging: 1 vial containing 1 pellet + 1 rehydration fluid vial

Quantitative: <100 CFU / 0.1 mL inoculum

Applications: Growth Promotion Testing, Microbial Limits Testing, Microbial Enumeration Testing

### **BioSafety Levels**

The Liofilchem® CultiControl™ freeze-dried microorganisms have a BioSafety level (BSL) of 1 or 2.

BSL 1 organisms have no, or low, risk to individuals and communities. BSL 1 organisms may cause disease in individuals with immune systems that are suppressed or compromised.

BSL 2 organisms pose a moderate risk of individual infection, but low risk of community infection.

Liofilchem adheres to the BSL level designation as determined by the Reference Culture Collection from which the microorganism strain was obtained. Responsibility for safe handling of biological agents ultimately rests with the user. All infectious materials should be handled under the supervision of a competent and knowledgeable microbiologist.

### **Recommended Growth Methods**

Primary growth on a nonselective agar medium is preferred. Primary growth in a fluid medium should only occur in special instances or when recommended. Because of the manipulations required during hydration, it is difficult to obtain purity of a lyophilized strain in a fluid medium. A contaminant may completely overgrow and obscure the presence of the lyophilized strain.

A list of microorganisms and relevant Recommended Growth Method is showed at page 4.

#### **Method 1**

Tryptic Soy Agar (Soybean Casein Digest Agar), nonselective Sheep Blood Agar, Standard Methods Agar (Plate Count Agar) or Nutrient Agar - 35°C in aerobic atmosphere – 24 to 48 hours.

#### **Method 2**

Nonselective Sheep Blood Agar - 35°C in aerobic atmosphere – 24 to 72 hours. Growth of some species such as *Streptococcus* and *Arcanobacterium* are enhanced by CO<sub>2</sub> enrichment of the incubation atmosphere. 5% CO<sub>2</sub> is recommended for the culture of *Streptococcus pneumoniae* and other streptococcal species of the viridians group.

#### **Method 3**

Chocolate Agar - 35°C in 5% to 7% CO<sub>2</sub> – 24 to 48 hours.



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#### Method 4

Anaerobic Blood Agar 35°C in Anaerobic Environment – 48 to 72 hours.

Some obligate anaerobes may require 5 to 7 days to demonstrate sufficient growth.

Fresh prepared Nutrient Agar, Tryptic Soy Agar (Soybean Casein Digest Agar), Standard Methods Agar (Plate Count Agar) are appropriate alternatives for some *Clostridium* species together with an additional period (24 hours) of incubation.

#### Method 5

Sabouraud Dextrose Emmons Agar - 25°C in aerobic atmosphere – 2 to 7 days.

Nonselective Sheep Blood Agar is an appropriate alternative.

Nutrient Agar, Tryptic Soy Agar, Potato Dextrose Agar and Standard Plate Count Agar are appropriate alternatives together with an additional period (24 hours) of incubation.

Sabouraud Dextrose Emmons Agar is the best medium for growth of *Saccharomyces* sp.

#### Method 6

Chocolate Agar - 35°C in Microaerophilic Environment – 48 to 72 hours.

#### Method 7

Lowenstein Jensen Agar or Middlebrook Agar - 35°C in 5 to 7% CO<sub>2</sub> or aerobic atmosphere – up to one week.

*M. fortuitum* subsp. *fortuitum*, *M. peregrinum* and *M. smegmatis* will also grow on Tryptic Soy Agar (Soybean Casein Digest Agar) as well as Lowenstein Jensen and Middlebrook Agar but additional incubation time may be required.

#### Method 8

Buffered Charcoal Yeast Extract Agar - 35°C in aerobic atmosphere – 3 to 5 days.

#### Method 9

V Agar or Chocolate Agar - 35°C in 5% to 7% CO<sub>2</sub>– 48 hours.

#### Method 10

Rehydrate in sterile Brain Heart Infusion Broth, Tryptic Soy Broth (Soybean Casein Digest Agar) or 0.85% Saline.

Rehydration with water may result in decreased or no recovery. Grow on Tryptic Soy Agar (Soybean Casein Digest Agar) - 35°C in aerobic atmosphere – 24 to 48 hrs. *Vibrio* sp. also grows on Marine Agar.

#### Method 11

The primary growth medium is MRS (Man, Rogosa, Sharpe) Broth. Incubate at 35°C in aerobic atmosphere for 48 hours. Transfer to either Columbia CNA with Sheep Blood or Tryptic Soy Agar with Sheep Blood. Incubate at 35°C in 5 to 7% CO<sub>2</sub> for 48 hrs. A few *Lactobacilli* species, such as *L. fermentum*, *L. paracasei* subsp. *paracasei*, *L. plantarum*, *L. rhamnosus*, and *L. sakei*, do not need to be started in Lactobacilli MRS broth. They may be plated directly to Columbia CNA with Sheep Blood or Tryptic Soy Agar with Sheep Blood and incubated at 35°C in 5 to 7% CO<sub>2</sub> for 48 hrs.

#### Method 12

Potato Dextrose Agar - 55 C in aerobic atmosphere – 24 to 48 hours.



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### Method 13

Rehydrate 1 pellet of *M. hominis* or *Ureaplasma* sp. in 10B Arginine Broth. Make serial dilutions (for example, 1:10, 1:100, 1:1000, 1:10,000). Incubate at 35 C in aerobic atmosphere. As soon as the Arginine vial turns pink (24 to 48 hours), sub 0.1 mL of broth to A8 Agar and streak for isolation. Do not use cotton swab or wooden shaft. Incubate mycoplasma at 35 C in 5 to 7% CO<sub>2</sub>. Incubate ureaplasma at 35 C anaerobically for up to 96 hours. In order to see colonies, examine plates microscopically.

### Method 14

Rehydrate 1 pellet of *M. pneumoniae* in SP4 Glucose Broth. Make serial dilutions (for example, 1:10, 1:100, 1:1000, 1:10,000). Incubate at 35°C in aerobic atmosphere. As soon as the broth turns from red to yellow (1-4 weeks), sub 0.2 mL of broth to SP4 Glucose Agar and streak for isolation. Do not use cotton swab or wooden shaft. Incubate at 35°C in CO<sub>2</sub> atmosphere, preferably in a candle jar, for 5 to 15 days. In order to see colonies, examine plates microscopically.

### Method 15

Rehydrate 1 pellet of *M. orale* in 10B Arginine Broth. Make serial dilutions (for example, 1:10, 1:100, 1:1000). Incubate at 35°C, in aerobic atmosphere. As soon as the broth turns from yellow to pink (48 to 72 hours), sub 0.2 mL of broth to SP4 Glucose Agar and streak for isolation. Do not use cotton swab or wooden shaft. Incubate plates at 35°C in anaerobic conditions for 3 to 6 days. In order to see colonies, examine plates microscopically.

### Method 16

Leeming Notman Agar - 30°C in aerobic atmosphere – 72 hours.

### Method 17

Rehydrate 1 pellet of *M. gallisepticum* in SP4 Glucose Broth. Make serial dilutions (for example, 1:2, 1:4). Incubate at 35°C in aerobic atmosphere. As soon as the broth turns from red to yellow (4 days to 2 weeks), sub 0.2 mL of broth to SP4 Glucose Agar and streak for isolation. Do not use cotton swab or wooden shaft. Incubate at 35°C in CO<sub>2</sub> atmosphere, preferably in a candle jar, for 3 days to 2 weeks. In order to see colonies, examine plates microscopically.

### Method 18

Rehydrate 1 pellet of *M. hyorhinae* in SP4 Glucose Broth. Make serial dilutions (for example, 1:10, 1:100, 1:1000). Incubate at 35°C in aerobic atmosphere. As soon as the broth turns from red to yellow (4 days to 2 weeks), sub 0.2 mL of broth to SP4 Glucose Agar and streak for isolation. Do not use cotton swab or wooden shaft. Incubate at 35°C in CO<sub>2</sub> atmosphere, preferably in a candle jar, for 2 to 10 days. In order to see colonies, examine plates microscopically.

### Method 19

Rehydrate 1 pellet of *M. synoviae* in SP4 Glucose Broth. Make serial dilutions (for example, 1:2, 1:4, 1:8, 1:16, 1:32). Incubate at 35°C in 5 to 10% CO<sub>2</sub> for 7 days. After 7 days (no color change will be noted), sub 0.2 mL of broth to SP4 Glucose Agar and streak for isolation. Do not use cotton swab or wooden shaft. Incubate at 35°C in CO<sub>2</sub> atmosphere, preferably in a candle jar, for 1 to 4 weeks. In order to see colonies, examine plates microscopically.

### Method 20

Chocolate agar, Sheep Blood Agar, Tryptic Soy Agar, Bordet Gengou Agar with 15% Defibrinated Sheep Blood - 35°C in aerobic atmosphere – 24 to 48 hours. Standard Methods (Plate Count Agar) or Nutrient Agar are appropriate alternatives together with an additional period (24 hours) of incubation.



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### Method 21

Chocolate or Bordet Gengou Agar with 15% Defibrinated Sheep Blood - 35°C in aerobic atmosphere – 2 days to one week. *B. pertussis*, Microbiologics #100, and *B. pertussis*, Microbiologics #0843, require Bordet Gengou Agar with 15% Defibrinated Sheep Blood.

### Method 22

Prepare ISF (modified Infant Soy Formula) Broth using the following steps: 1) fill tubes with 10 mL Infant Soy Formula, 2) place a four-penny nail in each tube, and 3) sterilize the broth. Infant Soy Formula may be purchased at a grocery store. A four-penny nail is approximately 1.5 inches or 38 mm in length. It should contain steel or iron.

Inoculate ISF Broth with one pellet. Make two dilutions, 1:10 and 1:100. Plate undiluted sample and plate the 1:10 and 1:100 dilutions. It is necessary to plate the diluted samples because at higher concentrations the colonies are pin-point which makes colony characteristics difficult to see. Grow at 55°C in anaerobic conditions for 48 hours. The broth will turn grey, indicating growth. Sub with a swab to Sulfite Agar. Sulfite Agar is used for detecting thermophilic anaerobes which produce sulfite. Incubate the agar in anaerobic environment at 55°C for 7 days.

### Method 23

Inoculate Mycoplasma Broth with a pellet. Prepare serial dilutions of 1:10, 1:100, and 1:1000 using the broth. Incubate at 35°C for 48 hours. Then plate 0.2 mL of the turbid broth culture to Mycoplasma Agar. Incubate agar in 5 to 7% CO<sub>2</sub> at 35° for 3 to 7 days. Do not use cotton swabs or wooden sticks. In order to see colonies, examine plates microscopically.

### Method 24

Sheep Blood Agar supplemented with Pyridoxal - 35° C in 5% to 7% CO<sub>2</sub> – 24 to 48 hours.



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## CultiControl™ and Quanti-CultiControl™ freeze-dried microorganisms

Description	CultiControl™ Ref.		Quanti-CultiControl™ Ref.	notes	BioSafety Level	recommended growth method
	CE	IVD				
<i>Acinetobacter baumannii</i> ATCC® BAA-747™*	89141		-		2	1
<i>Acinetobacter baumannii</i> ATCC® 19606™*	89174		-		2	1
<i>Actinomyces odontolyticus</i> ATCC® 17929™*	89114		-		2	4
<i>Aeromonas hydrophila</i> ATCC® 7966™*	89119		-		2	2
<i>Aeromonas hydrophila</i> ATCC® 35654™*	89169		-		2	2
<i>Aggregatibacter aphrophilus</i> ATCC® 7901™*	89091		-		2	3
<i>Aspergillus brasiliensis</i> ATCC® 16404™*	89021		89501		1	5
<i>Bacillus cereus</i> ATCC® 11778™*	89022		-		1	1
<i>Bacillus cereus</i> ATCC® 10876™*	89155		89502		1	1
<i>Bacillus subtilis</i> subsp. <i>spizizenii</i> ATCC® 6633™*	89023		89503		1	1
<i>Bacteroides fragilis</i> ATCC® 25285™*	89078		89505		2	4
<i>Bacteroides fragilis</i> ATCC® 23745™*	89113		-		2	4
<i>Bacteroides ovatus</i> ATCC® 8483™*	89111		-		2	4
<i>Bacteroides ovatus</i> ATCC® BAA-1296™*	89193		-		2	4
<i>Bacteroides thetaiotaomicron</i> ATCC® 29741™*	89079		-		2	4
<i>Bifidobacterium animalis</i> subsp. <i>animalis</i> ATCC® 25527™*	-		89539		1	4
<i>Bordetella bronchiseptica</i> ATCC® 4617™*	89139		-		2	15
<i>Brevundimonas diminuta</i> ATCC® 19146™*	-		89506		1	1
<i>Burkholderia cepacia</i> ATCC® 25416™*	89147		89507		2	1
<i>Burkholderia cepacia</i> ATCC® 25608™*	89166		-		2	1
<i>Campylobacter jejuni</i> subsp. <i>jejuni</i> ATCC® 33291™*	89086		-		2	6
<i>Campylobacter jejuni</i> subsp. <i>jejuni</i> ATCC® 33560™*	89145		-		2	6
<i>Campylobacter jejuni</i> subsp. <i>jejuni</i> ATCC® 29428™*	89167		-		2	6
<i>Candida albicans</i> ATCC® 10231™*	89024		89508		1	5
<i>Candida albicans</i> ATCC® 2091™*	-		89510		1	5
<i>Candida albicans</i> ATCC® 90028™*	89072		-		1	5
<i>Candida albicans</i> ATCC® 18804™*	89177		-		1	5
<i>Candida albicans</i> ATCC® 64124™*	89178		-		1	5
<i>Candida albicans</i> ATCC® 14053™*	89183		-		1	5
<i>Candida krusei</i> ATCC® 14243™*	89098		-		1	5
<i>Candida parapsilosis</i> ATCC® 22019™*	89071		-		1	5
<i>Candida tropicalis</i> ATCC® 750™*	89097		-		1	5
<i>Citrobacter freundii</i> ATCC® 43864™*	89146		-		1	1
<i>Citrobacter freundii</i> ATCC® 8090™*	89159		-		1	1
<i>Clostridium difficile</i> ATCC® 9689™*	89090		-	produces cytotoxin	2	4
<i>Clostridium histolyticum</i> ATCC® 19401™*	89112		-		2	4
<i>Clostridium perfringens</i> ATCC® 13124™*	89053		89512		2	4
<i>Clostridium sordellii</i> ATCC® 9714™*	89059		-		2	4



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	CE	IVD				
<i>Clostridium sporogenes</i> ATCC® 11437™*	-		89513		1	4
<i>Clostridium sporogenes</i> ATCC® 19404™*	89095		89514		1	4
<i>Cronobacter muytjensii</i> ATCC® 51329™*	89158		-		1	1
<i>Cronobacter sakazakii</i> ATCC® 29544™*	89138		-	formerly <i>Enterobacter sakazakii</i>	1	1
<i>Eikenella corrodens</i> ATCC® BAA-1152™*	89196		-		2	3
<i>Enterobacter aerogenes</i> ATCC® 13048™*	89156		89516		1	1
<i>Enterobacter cloacae</i> subsp. <i>cloacae</i> ATCC® 49141™*	89200		-		1	1
<i>Enterobacter cloacae</i> subsp. <i>cloacae</i> ATCC® BAA-1143™*	89065		-	control strain for the AmpC disk test; strong positive	2	1
<i>Enterococcus casseliflavus</i> ATCC® 700327™*	89195		-		1	1
<i>Enterococcus faecalis</i> ATCC® 19433™*	89025		-		2	1
<i>Enterococcus faecalis</i> ATCC® 29212™*	89026		89517		2	1
<i>Enterococcus faecalis</i> ATCC® 7080™*	-		89518		2	1
<i>Enterococcus faecalis</i> ATCC® 33186™*	89115		-		2	1
<i>Enterococcus faecalis</i> ATCC® 49532™*	89066		-	high level Gentamicin-resistant and Streptomycin-sensitive	2	1
<i>Enterococcus faecalis</i> ATCC® 49533™*	89067		-	high level Gentamicin-sensitive and Streptomycin-resistant	2	1
<i>Enterococcus faecalis</i> ATCC® 51299™*	89173		-	Vancomycin resistant and high level aminoglycosides, vanB	2	1
<i>Enterococcus faecium</i> ATCC® 51559™*	89117		-		2	1
<i>Enterococcus faecium</i> ATCC® 6057™*	89152		-		2	1
<i>Enterococcus faecium</i> ATCC® 19434™*	89171		-		2	1
<i>Enterococcus faecium</i> ATCC® BAA-2319™*	89172		-	vanA resistance	2	1
<i>Erysipelothrix rhusiopathiae</i> ATCC® 19414™*	89187		-		2	2
<i>Escherichia coli</i> ATCC® 11303™*	89184		-		1	1
<i>Escherichia coli</i> ATCC® 25922™*	89027		-		1	1
<i>Escherichia coli</i> ATCC® 8739™*	89028		89519		1	1
<i>Escherichia coli</i> ATCC® 35218™*	89163		-	beta lactamase producer	1	1
<i>Escherichia coli</i> NCTC 11954	89068		-	beta lactamase producer	1	1
<i>Fluoribacter bozemanii</i> ATCC® 33217™*	89157		-		2	8
<i>Fusobacterium nucleatum</i> subsp. <i>nucleatum</i> ATCC® 25586™*	89118		-		2	4
<i>Gardnerella vaginalis</i> ATCC® 14018™*	89099		-		2	9
<i>Geobacillus stearothermophilus</i> ATCC® 12980™*	-		89521		1	1



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<i>Geobacillus stearothermophilus</i> ATCC® 7953™*	89203		89522		1	1
<i>Haemophilus haemolyticus</i> ATCC® 33390™*	89123		-		2	3
<i>Haemophilus influenzae</i> ATCC® 49766™*	89076		-		2	3
<i>Haemophilus influenzae</i> ATCC® 49247™*	89077		-		2	3
<i>Haemophilus influenzae</i> ATCC® 19418™*	89160		-		2	3
<i>Haemophilus influenzae</i> ATCC® 10211™*	89120		-	type b; beta lactamase negative	2	3
<i>Haemophilus influenzae</i> ATCC® 33533™*	89124		-	type b; beta lactamase producer	2	3
<i>Haemophilus influenzae</i> NCTC 8468	89136		-		2	3
<i>Haemophilus influenzae</i> ATCC® 9007™*	89142		-	type c	2	3
<i>Haemophilus influenzae</i> ATCC® 33391™*	89176		-		2	3
<i>Issatchenkia orientalis</i> ATCC® 6258™*	89073		-		1	5
<i>Klebsiella pneumoniae</i> ATCC® BAA-1144™*	89150		-	control strain for the AmpC disk test; weak positive	2	1
<i>Klebsiella pneumoniae</i> ATCC® BAA-1705™*	89088		-	Modified Hodge Test (MHT) positive control	2	1
<i>Klebsiella pneumoniae</i> ATCC® BAA-2146™*	89069		-	New Delhi metallo-beta-lactamase (NDM-1) positive	2	1
<i>Klebsiella pneumoniae</i> subsp. pneumoniae ATCC® 700603™*	89070		-	ESBL positive	2	1
<i>Klebsiella pneumoniae</i> subsp. pneumoniae ATCC® 13883™*	89089		-		2	1
<i>Klebsiella pneumoniae</i> subsp. pneumoniae ATCC® 4352™*	89192		-		2	1
<i>Klebsiella pneumoniae</i> subsp. pneumoniae ATCC® 31488™*	89199		-		2	1
<i>Kocuria rhizophila</i> ATCC® 9341™*	-		89523		1	1
<i>Lactobacillus acidophilus</i> ATCC® 4356™*	89080		-		1	11
<i>Lactobacillus fermentum</i> ATCC® 9338™*	89100		89524		1	11
<i>Lactobacillus paracasei</i> subsp. paracasei ATCC® BAA-52™*	89055		-		1	11
<i>Lactobacillus leichmannii</i> ATCC® 4797™*	89081		-		1	11
<i>Lactococcus lactis</i> subsp. lactis ATCC® 19435™*	89082		-		1	2
<i>Legionella pneumophila</i> subsp. fraseri ATCC® 33156™*	89151		-		2	8
<i>Legionella pneumophila</i> subsp. pneumophila ATCC® 33152™*	89052		-		2	8
<i>Listeria grayi</i> ATCC® 25401™*	89101		-		1	1
<i>Listeria innocua</i> ATCC® 33090™*	89029		-		1	1
<i>Listeria ivanovii</i> subsp. ivanovii ATCC® 19119™*	89030		-		2	1
<i>Listeria monocytogenes</i> ATCC® 19111™*	89031		-	serotype 1	2	1



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	CE	IVD			
<i>Listeria monocytogenes</i> ATCC® 19115™*	89051	89525	serotype 4b	2	1
<i>Listeria monocytogenes</i> ATCC® 13932™*	89085	-	serotype 4b	2	1
<i>Listeria monocytogenes</i> ATCC® 7644™*	89060	-		2	1
<i>Listeria monocytogenes</i> ATCC® 35152™*	89148	-		2	1
<i>Listeria monocytogenes</i> ATCC® BAA-751™*	89143	-		2	1
<i>Listeria monocytogenes</i> ATCC® 15313™*	89188	-	non-hemolytic on sheep blood	2	1
<i>Micrococcus luteus</i> ATCC® 4698™*	89102	89526		1	1
<i>Micrococcus luteus</i> ATCC® 10240™*	89096	-		1	1
<i>Moraxella (Branhamella) catarrhalis</i> ATCC® 25238™*	89103	-		1	2
<i>Neisseria gonorrhoeae</i> ATCC® 19424™*	89074	-		2	3
<i>Neisseria gonorrhoeae</i> ATCC® 31426™*	89075	-	beta lactamase producer	2	3
<i>Neisseria gonorrhoeae</i> ATCC® 49226™*	89104	-		2	3
<i>Neisseria gonorrhoeae</i> ATCC® 49981™*	89122	-	Penicillin resistant	2	3
<i>Neisseria meningitidis</i> ATCC® 13090™*	89164	-	serogroup B	2	3
<i>Nocardia brasiliensis</i> ATCC® 19296™*	89189	-		2	1
<i>Peptostreptococcus anaerobius</i> ATCC® 27337™*	89165	-		1	4
<i>Plesiomonas shigelloides</i> ATCC® 14029™*	89094	-		2	1
<i>Porphyromonas gingivalis</i> ATCC® 33277™*	89162	-		2	4
<i>Prevotella melaninogenica</i> ATCC® 25845™*	89134	-		2	4
<i>Propionibacterium acnes</i> ATCC® 11827™*	89135	-		1	4
<i>Proteus hauseri</i> ATCC® 13315™*	89190	-		2	1
<i>Proteus mirabilis</i> ATCC® 25933™*	89032	-		2	1
<i>Proteus mirabilis</i> ATCC® 12453™*	89049	-		2	1
<i>Proteus mirabilis</i> ATCC® 29906™*	89083	-		2	1
<i>Proteus mirabilis</i> ATCC® 35659™*	89105	-		2	1
<i>Proteus mirabilis</i> ATCC® 43071™*	89106	-		2	1
<i>Proteus vulgaris</i> ATCC® 6380™*	89107	-		2	1
<i>Providencia stuartii</i> ATCC® 33672™*	89125	-		1	1
<i>Pseudomonas aeruginosa</i> ATCC® 15442™*	89109	-	Pyocyanin not produced	2	1
<i>Pseudomonas aeruginosa</i> ATCC® 10145™*	89108	-		2	1
<i>Pseudomonas aeruginosa</i> ATCC® 27853™*	89033	89527		2	1
<i>Pseudomonas aeruginosa</i> ATCC® 9027™*	89034	89528		2	1
<i>Pseudomonas fluorescens</i> ATCC® 13525™*	89110	-		1	1
<i>Rhodococcus equi</i> ATCC® 6939™*	89035	-	recommended for CAMP test for <i>Listeria monocytogenes</i>	2	2
<i>Saccharomyces cerevisiae</i> ATCC® 9763™*	89036	-		1	5
<i>Salmonella enterica</i> subsp. <i>arizonae</i> ATCC® 13314™*	89154	-		2	1



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## CultiControl™ and Quanti-CultiControl™ freeze-dried microorganisms

Description	CultiControl™ Ref.		Quanti-CultiControl™ Ref.	notes	BioSafety Level	recommended growth method
	CE	IVD				
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Abony NCTC 6017	89132		89532		2	1
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Choleraesuis ATCC® 10708™*	-		89529	H <sub>2</sub> S negative	2	1
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Enteritidis ATCC® 13076™*	89084		-	group D	2	1
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Paratyphi ATCC® 9150™*	89161		-	group A; H <sub>2</sub> S negative	2	1
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium ATCC® 14028™*	89037		89531		2	1
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium ATCC® 13311™*	89054		89530		2	1
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Typhimurium ATCC® 49416™*	89197		-	highly mutable; recommended for Ames test	2	1
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Hillingdon ATCC® 9184™*	89185		-		2	1
<i>Serratia marcescens</i> ATCC® 8100™*	89121		-		1	1
<i>Serratia marcescens</i> ATCC® 14756™*	89191		-	pigmented	1	1
<i>Shigella boydii</i> ATCC® 9207™*	89179		-	serotype 1	2	1
<i>Shigella flexneri</i> ATCC® 12022™*	89038		-	serotype 2b	2	1
<i>Shigella flexneri</i> ATCC® 9199™*	89198		-	serotype 1a	2	1
<i>Shigella sonnei</i> ATCC® 25931™*	89058		-		2	1
<i>Shigella sonnei</i> ATCC® 9290™*	89180		-		2	1
<i>Staphylococcus aureus</i> ATCC® 33862™*	89042		-	recommended for CAMP test	2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 29213™*	89041		-		2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 25923™*	89040		89533	recommended for CAMP test	2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 33591™*	89116		-	methicillin resistant	2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 43300™*	89043		-	methicillin resistant; mec A positive	2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 700699™*	89093		-	Methicillin resistant; Mu50; reduced Vancomycin susceptibility	2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 700698™*	89092		-	Methicillin resistant; GRD MIC Test Strip control	2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 19095™*	89137		-		2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 49476™*	89181		-		2	1
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 9144™*	89182		-		2	1



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## CultiControl™ and Quanti-CultiControl™ freeze-dried microorganisms

Description	CultiControl™ Ref.		Quanti-CultiControl™ Ref.	notes	BioSafety Level	recommended growth method
	CE	IVD				
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® BAA-44™*	89170		-	Methicillin resistant	2	1
<i>Staphylococcus aureus</i> ATCC® 6538™*	89044		89535		2	1
<i>Staphylococcus aureus</i> ATCC® 6538P™*	-		89534		2	1
<i>Staphylococcus aureus</i> NCTC 12493	89039		-	methicillin resistant	2	1
<i>Staphylococcus epidermidis</i> ATCC® 12228™*	89045		89537		1	1
<i>Staphylococcus epidermidis</i> ATCC® 14990™*	89202		-		1	1
<i>Staphylococcus haemolyticus</i> ATCC® 29970™*	89126		-		2	1
<i>Staphylococcus saprophyticus</i> ATCC® 15305™*	89153		-		1	1
<i>Staphylococcus xylosus</i> ATCC® 29971™*	89133		-		2	1
<i>Stenotrophomonas maltophilia</i> ATCC® 13637™*	89149		-		1	1
<i>Stenotrophomonas maltophilia</i> ATCC® 17666™*	89194		-		1	1
<i>Streptococcus agalactiae</i> ATCC® 13813™*	89046		-	group B; non-hemolytic in absence of CAMP Factor	2	2
<i>Streptococcus anginosus</i> ATCC® 33397™*	89127		-	group G; type 1	2	2
<i>Streptococcus bovis</i> ATCC® 33317™*	89061		-		1	2
<i>Streptococcus dysgalactiae</i> subsp. <i>equisimilis</i> ATCC® 12388™*	89128		-	group C	2	2
<i>Streptococcus mitis</i> ATCC® 6249™*	89129		-		2	2
<i>Streptococcus mutans</i> ATCC® 25175™*	89062		-		1	2
<i>Streptococcus pneumoniae</i> ATCC® 27336™*	89063		-		2	2
<i>Streptococcus pneumoniae</i> ATCC® 49619™*	89047		-	low level penicillin resistance by oxacillin test	2	2
<i>Streptococcus pneumoniae</i> ATCC® 700671™*	89175		-		2	2
<i>Streptococcus pyogenes</i> ATCC® 19615™*	89048		89538	group A	2	2
<i>Streptococcus pyogenes</i> ATCC® 49399™*	89130		-	group A	2	2
<i>Streptococcus salivarius</i> ATCC® 13419™*	89131		-		1	2
<i>Streptococcus salivarius</i> subsp. <i>thermophilus</i> ATCC® 19258™*	89186		-		1	2
<i>Streptococcus sanguinis</i> ATCC® 10556™*	89064		-		2	2
<i>Trichophyton mentagrophytes</i> ATCC® 9533™*	89140		-		2	5
<i>Vibrio alginolyticus</i> ATCC® 17749™*	89144		-		1	10
<i>Vibrio parahaemolyticus</i> ATCC® 17802™*	89056		-		2	10
<i>Yersinia enterocolitica</i> subsp. <i>enterocolitica</i> ATCC® 9610™*	89050		-	biovar 1; serogroup O:8	2	1
<i>Yersinia enterocolitica</i> subsp. <i>enterocolitica</i> ATCC® 23715™*	89168		-	biotype 1; serotype 8	2	1



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**LIOFILCHEM® s.r.l.**

Via Scozia zona ind.le, 64026 Roseto degli Abruzzi (Te) Italy

Tel. +39 0858930745 Fax +39 0858930330 [www.liofilchem.net](http://www.liofilchem.net) [liofilchem@liofilchem.net](mailto:liofilchem@liofilchem.net)



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