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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
HALF FRASER SELECTIVE SUPPLEMENT SR0166G		

HALF FRASER SELECTIVE SUPPLEMENT

SR0166G

Formula

Vial contents (each vial is sufficient to supplement 2.25 litres of medium)

Ammonium iron (III) citrate	1.125 g
Nalidixic acid	22.5 mg
Acriflavine	28.125 mg

Description

A selective supplement for the isolation of *Listeria* spp.

Directions

Aseptically add 4ml 1:1 ethanol:sterile distilled water to 1 vial and invert gently to dissolve. Aseptically add the vial contents to 2.25 litres of sterile Fraser Broth Base (CM0895) prepared as directed and cooled to 50°C. Mix well and aseptically dispense into sterile containers.

Physical Characteristics

Orange/green pellet
Sterility - passes test

Microbiological Tests Using Optimum Inoculum Dilution

Control Media: Chromogenic *Listeria* Agar (ISO), Tryptone Soya Agar or Columbia Blood Agar Base enriched with 5% v/v horse blood, where appropriate

Tested in Fraser Broth Base CM0895

Reactions after incubation at 30 ± 2°C for 24 ± 2 hours

Inoculate 10ml quantities of medium to achieve 1-10 colony-forming units/ml (cfu/ml) of *Listeria monocytogenes*. Incubate broths at 30 ± 2°C for 24 ± 2 hours. Subculture onto Chromogenic *Listeria* Agar (ISO) (CM1084, SR0226 & SR0228) and incubate plates at 37 ± 2°C for 24 ± 2 hours.

<i>Listeria monocytogenes</i>	ATCC®7644
<i>Listeria monocytogenes</i>	ATCC®13932

A satisfactory result is represented by recovery of positive strains equal to or greater than a 4 log(10) increase.

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Positive strains shall produce aesculin hydrolysis after 24 hours.

Reactions after incubation at 30 ± 2°C for 24 ± 2 hours

Inoculate 10ml quantities of medium to achieve >1E+03 cfu/ml. Incubate broths at 30 ± 2°C for 24 ± 2 hours.

Bacillus cereus ATCC®10876 No aesculin hydrolysis (no blackening)

Negative strains are inhibited or shall produce a negative diagnostic reaction.

Productivity determined by qualitative testing in accordance with the methods and criteria described in ISO 11133:2014

Inoculation with mixed cultures

Inoculate 10ml quantities of medium to achieve 1 – 10 colony-forming units/ml (cfu/ml) of *Listeria monocytogenes*, to each add 1E+02 to 1E+03 cfu/ml of *Escherichia coli* and 1E+02 to 1E+03 cfu/ml of *Enterococcus faecalis*. Incubate broths at 30 ± 2°C for 25 ± 1 hour. Subculture onto Chromogenic Listeria Agar (ISO) (CM1084, SR0226 & SR0228) and incubate plates at 37 ± 2°C for 24 ± 2 hours

Reactions after incubation at 30 ± 2°C for 25 ± 1 hour

<i>Listeria monocytogenes</i>	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®8739	WDCM00012	No growth
+ <i>Enterococcus faecalis</i>	ATCC®19433	WDCM00009	No growth

<i>Listeria monocytogenes</i>	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®25922	WDCM00013	No growth
+ <i>Enterococcus faecalis</i>	ATCC®19433	WDCM00009	No growth

<i>Listeria monocytogenes</i>	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®8739	WDCM00012	No growth
+ <i>Enterococcus faecalis</i>	ATCC®29212	WDCM00087	No growth

<i>Listeria monocytogenes</i>	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®25922	WDCM00013	No growth
+ <i>Enterococcus faecalis</i>	ATCC®29212	WDCM00087	No growth

<i>Listeria monocytogenes</i>	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®8739	WDCM00012	No growth

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+ <i>Enterococcus faecalis</i>	ATCC®19433	WDCM00009	No growth
<i>Listeria monocytogenes</i>	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®25922	WDCM00013	No growth
+ <i>Enterococcus faecalis</i>	ATCC®19433	WDCM00009	No growth
<i>Listeria monocytogenes</i>	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®8739	WDCM00012	No growth
+ <i>Enterococcus faecalis</i>	ATCC®29212	WDCM00087	No growth
<i>Listeria monocytogenes</i>	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ <i>Escherichia coli</i>	ATCC®25922	WDCM00013	No growth
+ <i>Enterococcus faecalis</i>	ATCC®29212	WDCM00087	No growth

A satisfactory result is represented by recovery of >10 cfu of *Listeria monocytogenes* on Chromogenic Listeria Agar (ISO).

Selectivity determined by qualitative testing based on the methods described in ISO 11133:2014

Inoculation with pure cultures

Inoculate 10ml quantities of medium to achieve 1E+03 to 1E+04 colony-forming units/ml (cfu/ml) of *Escherichia coli* and *Enterococcus faecalis*. Incubate broths at 30 ± 2°C for 25 ± 1 hour. Subculture onto Chromogenic Listeria Agar (ISO) (CM1084, SR0226 & SR0228) and Tryptone Soya Agar (CM0131) and incubate plates at 37 ± 2°C for 24 ± 2 hours.

Reactions after incubation at 30 ± 2°C for 25 ± 1 hour

<i>Escherichia coli</i>	ATCC®8739	WDCM00012	No growth (CM1084, SR0226 & SR0228) No growth or cream colonies (CM0131)
<i>Escherichia coli</i>	ATCC®25922	WDCM00013	No growth (CM1084, SR0226 & SR0228) No growth or cream colonies (CM0131)
<i>Enterococcus faecalis</i>	ATCC®19433	WDCM00009	No growth (CM1084, SR0226 & SR0228) No growth or cream colonies (CM0131)
<i>Enterococcus faecalis</i>	ATCC®29212	WDCM00087	No growth (CM1084, SR0226 & SR0228) No growth or cream colonies (CM0131)

A satisfactory result is represented by no growth of *Escherichia coli* and *Enterococcus faecalis* on Chromogenic Listeria Agar (ISO).


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On Tryptone Soya Agar, a satisfactory result is represented by less than or equal to 1E+04 cfu/ml (equivalent to less than or equal to 100 cfu/10µl) for *Escherichia coli* and by less than or equal to 1E+06 cfu/ml (equivalent to less than or equal to 1E+04 cfu/10µl) for *Enterococcus faecalis*.

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HALF FRASER SELECTIVE SUPPLEMENT SR0166G		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Microbiological characteristics	Clarification of ISO 11133:2014 qualitative testing for mixed and pure cultures.	Change control	MOC-2022-0393

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
COOKED MEAT MEDIUM CM0081		

COOKED MEAT MEDIUM

CM0081

Typical Formula*

	grams per litre	
Heart muscle		454.0
Peptone		10.0
'Lab-Lemco' powder		10.0
Sodium chloride		5.0
Glucose		2.0

* adjusted as required to meet performance standards

Directions

Distribute 1.0g amounts of granules into tubes or bottles and add 10ml of distilled water. Increase the weight of granules and volume of water proportionally for larger quantities. Sterilize by autoclaving at 121°C for 15 minutes.

Physical Characteristics

Brown, free-flowing granules

Colour on reconstitution - straw 4-5

Moisture level - less than or equal to 5%

pH - 7.2 ± 0.2 at 25°C

Clarity - clear. Meat particles should occupy no less than 40ml in a 100ml volume of medium.

Microbiological Tests Using Optimum Inoculum Dilution

Control Media: Tryptone Soya Agar or Columbia Blood Agar Base enriched with 5% v/v horse blood, where appropriate

Reactions after incubation at 37°C for 48 hours

Medium is challenged with 1-10 colony-forming units/ml (cfu/ml)

<i>Clostridium perfringens</i>	ATCC®13124	Proteolytic, saccharolytic, H ₂ S positive
<i>Clostridium tetani</i>	ATCC®9441	Proteolytic, H ₂ S positive
<i>Clostridium histolyticum</i>	ATCC®19401	Proteolytic, H ₂ S positive
<i>Peptostreptococcus anaerobius</i>	ATCC®27337	Saccharolytic
<i>Bacillus subtilis</i>	ATCC®6633	Surface growth

A satisfactory result is represented by reactions in accordance with the specification.


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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
COOKED MEAT MEDIUM CM0081		

After incubation broth is subcultured onto a blood agar plate and incubated at 37°C for 24 hours

Medium is challenged with less than 1E+03 colony-forming units/ml (cfu/ml)


Streptococcus pneumoniae ATCC®6303 0.5-4mm grey/green colonies, α haemolysis

A satisfactory result is represented by recovery equal to or greater than a 3 log (10) increase.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
COOKED MEAT MEDIUM CM0081		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire document	Update to new product specification template and update of organisms.	Change control	BT-CC-1485
Entire Document	Correction of typographical/minor errors. Addition of Control Media and Result Criteria.	Change control	BT-CC-1918

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
TRYPTONE SOYA BROTH (CM0129)		

TRYPTONE SOYA BROTH

CM0129

Typical Formula*

Pancreatic digest of casein	grams per litre	17.0
Enzymatic** digest of soya bean		3.0
Sodium chloride		5.0
Di-potassium hydrogen phosphate		2.5
Glucose		2.5

** contains papain

* adjusted as required to meet performance standards


Directions

Dissolve 30g in 1 litre of water (purified, as required) and distribute into final containers. Sterilize by autoclaving at 121°C for 15 minutes.

Physical Characteristics

Straw, free-flowing powder
 Colour on reconstitution - straw 2-3
 Moisture level - less than 7%
 pH 7.3 ± 0.2 at 25°C
 Clarity - clear

Thermophiles and mesophiles shall be absent after incubation at 55°C and 37°C for 3 days.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
TRYPTONE SOYA BROTH (CM0129)		

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar, Columbia Blood Agar Base enriched with 5% v/v horse blood or Sabouraud Dextrose Agar, where appropriate

Reactions after incubation at 30-35°C for 18-24 hours

Medium is challenged with 10-100 colony-forming units

<i>Streptococcus pyogenes</i>	ATCC® 19615	Turbid growth
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A satisfactory result is represented by visible growth.

Tested in accordance with current CLSI M22 A

Reactions after incubation at 33-37°C for 18-24 hours

Medium is challenged with 1E+04 to 1E+06 colony-forming units

<i>Escherichia coli</i>	ATCC® 25922	Turbid growth
<i>Staphylococcus aureus</i>	ATCC® 25923	Turbid growth

A satisfactory result is represented by visible growth.

Reactions after incubation at 33-37°C for 5 days

Medium is challenged with 1E+04 to 1E+06 colony-forming units

<i>Streptococcus pneumoniae</i>	ATCC® 6305	Turbid growth
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A satisfactory result is represented by visible growth.

Reactions after incubation at 33-37°C for 5 days under anaerobic conditions (for details refer to Oxoid Manual - Atmosphere Generation Systems)

Medium is challenged with 1E+04 to 1E+06 colony-forming units

<i>Bacteroides fragilis</i>	ATCC® 25285	Turbid growth
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A satisfactory result is represented by visible growth.

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TRYPTONE SOYA BROTH (CM0129)		

Tested in accordance with current USP/EP/BP/JP

Reactions after incubation at 30-35°C for 24 hours

Medium is challenged with 10-100 colony-forming units

<i>Escherichia coli</i>	ATCC® 8739	Turbid growth
<i>Staphylococcus aureus</i>	ATCC® 6538	Turbid growth
<i>Pseudomonas aeruginosa</i>	ATCC® 9027	Turbid growth
<i>Salmonella abony</i>	NCTC 6017	Turbid growth
<i>Salmonella typhimurium</i>	ATCC® 14028	Turbid growth

A satisfactory result is represented by visible growth.

Reactions after incubation at 30-35°C for 3 days

Medium is challenged with 10-100 colony-forming units

<i>Bacillus subtilis</i>	ATCC® 6633	Flocculent/surface growth
<i>Kocuria rhizophila</i>	ATCC® 9341	Turbid growth


A satisfactory result is represented by visible growth.

Reactions after incubation at 20-25°C for 48 hours

Medium is challenged with 10-100 colony-forming units

<i>Bacillus subtilis</i>	ATCC® 6633	Flocculent/surface growth
<i>Candida albicans</i>	ATCC® 10231	Flocculent/surface growth

A satisfactory result is represented by visible growth.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
TRYPTONE SOYA BROTH (CM0129)		

Reactions after incubation at 20-25°C for 5 days


Medium is challenged with 10-100 colony-forming units

<i>Aspergillus brasiliensis</i>	ATCC® 16404	White mycelia, black spores / no spores
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A satisfactory result is represented by visible growth.


The Microbiological Quality Control of this product complies with the following pharmacopoeia;

1. European Pharmacopoeia: Current version.
 - 2.6.12 Microbiological Examination of Non-Sterile Products: Harmonised Method: Microbial Enumeration tests
 - 2.6.13 Microbiological Examination of Non-Sterile Products: Tests for Specified Microorganisms. B. Harmonised Method
2. United States Pharmacopoeia: Current version.
 - 61 Microbiological Examination of Non-Sterile Products: Microbial Enumeration tests.
 - 62 Microbiological Examination of Non-Sterile Products: Tests for Specified Microorganisms
3. Japanese Pharmacopoeia: Current version.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
TRYPTONE SOYA BROTH (CM0129)		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
N/A	Addition of CLSI testing Update to USP/EP/BP/JP testing	Change control	BT-CC-1475

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
TRYPTONE SOYA AGAR CM0131		

TRYPTONE SOYA AGAR

CM0131

(Casein soya bean digest agar)†

† EP, USP, JP, BP

Typical Formula*

Pancreatic digest of casein	grams per litre	15.0
Enzymatic** digest of soya bean		5.0
Sodium chloride		5.0
Agar		15.0

** contains papain

* adjusted as required to meet performance standards

Directions

Suspend 40g in 1 litre of water (purified, as required). Bring to the boil to dissolve completely. Sterilize by autoclaving at 121°C for 15 minutes. Mix well and pour into sterile Petri dishes.

Physical Characteristics

Straw, free-flowing powder

Colour on reconstitution - straw 1-2

Moisture level - less than or equal to 7%

pH 7.3 ± 0.2 at 25°C

Clarity - clear

Gel strength - firm, comparable to 15.0g/litre of agar

The medium is tested for compatibility using 7% v/v oxalated horse blood, defibrinated horse blood or defibrinated sheep blood. There shall be no evidence of lysis or darkening, after incubation at 37°C, 25°C and 4°C for 72 hours.

Microbiological Tests using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Plain plates


Reactions after incubation at 30-35°C for 18-24 hours

Medium is challenged with 10-100 colony-forming units

Streptococcus pyogenes

ATCC®19615

0.25-0.5mm pale straw colonies

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<i>Streptococcus viridans</i>	NCTC1080	0.25-0.5mm pale straw colonies
<i>Staphylococcus aureus</i>	ATCC®9144	0.5-1mm straw colonies
<i>Staphylococcus epidermidis</i>	ATCC®12228	1-2mm white/grey colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Enriched with 7% v/v horse blood

Reactions after incubation at 37°C for 24 hours

Medium is challenged with 10-100 colony-forming units

<i>Streptococcus pyogenes</i>	ATCC®19615	0.25-0.5mm pale straw colonies, β haemolysis
<i>Streptococcus viridans</i>	NCTC1080	0.5-1mm grey/green colonies, α haemolysis
<i>Streptococcus pneumoniae</i>	ATCC®6305	0.5-1mm grey/green colonies, α haemolysis

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Reactions after incubation at 37°C for 48 hours under microaerophilic conditions


<i>Haemophilus influenzae</i>	ATCC® 19418	Pinpoint-0.5mm colourless colonies
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A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Zones of growth/no growth surrounding X, V and X+V factor discs (DD0003, DD0004 and DD0005) when plain plates are inoculated with the following organisms and incubated at 37°C for 18 hours:

		X	V	X+V
<i>Haemophilus influenzae</i>	ATCC®9334	0	0	≥ 15mm
<i>Haemophilus influenzae</i>	ATCC®19418	0	0	≥ 15mm
<i>Haemophilus influenzae</i>	ATCC®49247	0	0	≥ 15mm
<i>Haemophilus parainfluenzae</i>	ATCC®33392	0	≥ 20mm	≥ 20mm

Zones of inhibition with Bacitracin discs (DD0002) shall be 10-20mm when 7% v/v horse blood plates are inoculated with *Streptococcus pyogenes* ATCC® 19615 and incubated at 37°C for 18 hours.

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TRYPTONE SOYA AGAR CM0131		

Testing performed in accordance with ISO11133:2014

Plain plates

Reactions after incubation at 30 ± 2°C for 24 ± 2 hours

Medium is challenged with 50-120 colony-forming units

<i>Bacillus cereus</i>	ATCC®11778	WDCM00001	3-5mm irregular, straw colonies
<i>Bacillus subtilis</i>	ATCC®6633	WDCM00003	2-4mm irregular, straw colonies
<i>Escherichia coli</i>	ATCC®8739	WDCM00012	1-3mm cream colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Reactions after incubation at 36 ± 2°C for 20 ± 2 hours

Medium is challenged with 50-120 colony-forming units

<i>Escherichia coli</i>	ATCC®25922	WDCM00013	1-3mm cream colonies
<i>Escherichia coli</i>	ATCC®11775	WDCM00090	1-3mm cream colonies
<i>Escherichia coli</i>	NCTC13167	WDCM00179	1-3mm cream colonies
<i>Pseudomonas aeruginosa</i>	ATCC®10145	WDCM00024	1-4mm straw colonies
<i>Enterococcus faecalis</i>	ATCC®29212	WDCM00087	0.5-2mm straw colonies


A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Reactions after incubation at 37 ± 2°C for 24 ± 2 hours

Medium is challenged with 50-120 colony-forming units

<i>Staphylococcus aureus</i>	ATCC®25923	WDCM00034	0.5-1mm straw colonies
<i>Listeria monocytogenes</i>	ATCC®13932	WDCM00021	0.25-2mm straw colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

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TRYPTONE SOYA AGAR CM0131		

Reactions after incubation at 44 ± 2°C for 21 ± 3 hours

Medium is challenged with 50-120 colony-forming units

Escherichia coli ATCC®8739 WDCM00012 1-3mm cream colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Reactions after anaerobic incubation at 44 ± 2°C for 21 ± 3 hours

Medium is challenged with 50-120 colony-forming units

Clostridium perfringens ATCC®13124 WDCM00007 1-2mm straw colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.


Testing performed in accordance with current CLSI M22 A

Enriched with 5% Sheep Blood

Reactions after incubation at 35 ± 2°C for 21 ± 3 hours

Medium is challenged with 1E+02 to 1E+04 colony-forming units

<i>Streptococcus pyogenes</i>	ATCC®19615	0.5-1mm pale straw colonies, β haemolysis
<i>Streptococcus pneumoniae</i>	ATCC®6305	0.5-2mm grey/green colonies, α haemolysis
<i>Staphylococcus aureus</i>	ATCC®25923	1-2mm white/grey colonies
<i>Escherichia coli</i>	ATCC®25922	1-2mm straw colonies

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TRYPTONE SOYA AGAR CM0131		

Testing performed in accordance with current USP/EP/BP/JP

Plain plates

Reactions after incubation at 30-35°C for 24 hours

Medium is challenged with 10-100 colony-forming units

<i>Staphylococcus aureus</i>	ATCC® 6538	0.5-1mm straw colonies
<i>Escherichia coli</i>	ATCC® 8739	1-3mm cream colonies
<i>Bacillus subtilis</i>	ATCC® 6633	2-4mm irregular, straw colonies
<i>Pseudomonas aeruginosa</i>	ATCC® 9027	1-4mm straw colonies
<i>Salmonella typhimurium</i>	ATCC® 14028	1-3mm straw colonies
<i>Salmonella abony</i>	NCTC6017	1-3mm straw colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Reactions after incubation at 30-35°C for 5 days


Medium is challenged with 10-100 colony-forming units

<i>Candida albicans</i>	ATCC® 10231	1-3mm cream colonies
<i>Aspergillus brasiliensis</i>	ATCC® 16404	Greater than 10mm colonies, white mycelia, with/without black spores

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.


The Microbiological Quality Control of this product complies with the following pharmacopoeia;

1. European Pharmacopoeia: Current version.
 - 2.6.12 Microbiological Examination of Non-Sterile Products: Harmonised Method: Microbial Enumeration tests
 - 2.6.13 Microbiological Examination of Non-Sterile Products: Tests for Specified Microorganisms. B. Harmonised Method
2. United States Pharmacopoeia: Current version.
 - 61 Microbiological Examination of Non-Sterile Products: Microbial Enumeration tests.
 - 62 Microbiological Examination of Non-Sterile Products: Tests for Specified Microorganisms
3. Japanese Pharmacopoeia: Current version.

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TRYPTONE SOYA AGAR CM0131		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire document/ Microbiological Characteristics	Update to current format. Removal of duplicate results and obsolete statements/ Change <i>Haemophilus influenzae</i> from ATCC9344 to 9334. Change 44°C incubation time from 21 ± 2 hours to ± 3 hours.	Minor - Implementation of IVDR (2017746)	MOC-2022-0167

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
BISMUTH SULPHITE AGAR CM0201		

BISMUTH SULPHITE AGAR

CM0201

Typical Formula*

	grams per litre	
Peptone		5.0
'Lab-Lemco' powder		5.0
Glucose		5.0
Di-sodium phosphate		4.0
Iron (II) sulphate		0.3
Bismuth sulphite indicator		8.0
Brilliant green		0.016
Agar		12.7

* adjusted as required to meet performance standards

Directions

Suspend 20g in 500ml of distilled water in a 1 litre flask. With frequent agitation, bring to the boil to dissolve completely. Cool to 50°C. Mix well to ensure even dispersion of the medium and pour 25ml into sterile Petri dishes. Allow the medium to solidify with the dish uncovered. Larger volumes may be prepared if great care is taken and adequate headspace is provided. DO NOT AUTOCLAVE. DO NOT OVERHEAT.

Physical Characteristics

Light green, free-flowing powder
 Colour on reconstitution - light green
 Moisture level - less than or equal to 7%
 pH - 7.6 ± 0.2 at 25°C
 Clarity - opaque
 Gel strength - firm, comparable to 12.7g/litre of agar


Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Reactions after incubation at 37°C for 48 hours

Medium is challenged with 10-100 colony-forming units

<i>Salmonella typhi</i>	ATCC®19430	0.5-2mm black 'rabbit-eye' colonies with sheen
<i>Salmonella typhimurium</i>	ATCC®14028	0.25-2mm black colonies with sheen
<i>Salmonella virchow</i>	NCTC5742	0.25-2mm black colonies with sheen

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BISMUTH SULPHITE AGAR CM0201		

<i>Salmonella abony</i>	NCTC6017	0.25-2mm black colonies with sheen
<i>Salmonella poona</i>	NCTC4840	0.25-2mm black colonies with sheen
<i>Salmonella enteritidis</i>	ATCC®13076	0.25-1.5mm green colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

Medium is challenged with 50-200 colony-forming units

<i>Escherichia coli</i>	ATCC®25922	No growth to 1.5mm green colonies
<i>Escherichia coli</i>	ATCC®8739	No growth to 1.5mm green colonies
<i>Klebsiella pneumoniae</i>	ATCC®13883	No growth to 3.5mm green colonies
<i>Citrobacter freundii</i>	ATCC®8090	0.5-1.5mm dark green colonies


A satisfactory result is represented by recovery equal to or less than 100% of the control medium.

Medium is challenged with 1E+04 to 1E+06 colony-forming units

<i>Staphylococcus aureus</i>	ATCC®6538	No growth
<i>Enterococcus faecalis</i>	ATCC®29212	No growth
<i>Pseudomonas aeruginosa</i>	ATCC®9027	No growth to 1.0mm green colonies


Negative strains are inhibited. For *Pseudomonas aeruginosa* ATCC®9027, a satisfactory result is represented by a negative diagnostic reaction.

Equivalent results are obtained after incubation at 30-35°C for 48 hours.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
BISMUTH SULPHITE AGAR CM0201		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Reactions after incubation at 37°C for 48 hours'	Clarifying acceptable colony sizes for <i>Klebsiella pneumoniae</i> ATCC®13883	Change Control	MOC-2022-1108

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
PLATE COUNT AGAR (ISO) (CM0325)		

**PLATE COUNT AGAR (ISO)
(Tryptone Glucose Yeast Agar)**

CM0325

Formula

Enzymatic digest of casein	grams per litre	5.0
Yeast extract		2.5
Glucose		1.0
Agar		9.0

Directions

Suspend 17.5g in 1 litre of distilled water. Dissolve by bringing to the boil with frequent stirring, mix and distribute into final containers. Sterilize by autoclaving at 121°C for 15 minutes.

Physical Characteristics

Straw, free flowing powder
 Colour on reconstitution - straw 1-2
 Moisture level - less than 7%
 pH - 7.0 ± 0.2 at 25 °C
 Clarity - clear
 Gel Strength - firm, comparable to 9.0g/litre Agar

Thermophiles and Mesophiles shall be absent after incubation at 55°C and 37°C for 3 days.

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Medium is challenged with 10-100 colony forming units


Standard plate counts are performed using Quality Control Organisms

Reactions after incubation at 30 ± 2°C for 48 ± 2 hours

Pour plate technique

<i>Staphylococcus aureus</i>	ATCC® 6538	0.5-2mm straw colonies
<i>Staphylococcus aureus</i>	ATCC® 6538P	0.5-2mm straw colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
PLATE COUNT AGAR (ISO) (CM0325)		

Testing performed in accordance with ISO11133:2014


Reactions after incubation at 30 ± 2°C for 72 ± 3 hours

Pour plate technique

Medium is challenged with 50-120 colony forming units


<i>Escherichia coli</i>	ATCC® 25922	WDCM00013	1-3mm straw colonies
<i>Escherichia coli</i>	ATCC® 8739	WDCM00012	1-3mm straw colonies
<i>Staphylococcus aureus</i>	ATCC® 25923	WDCM00034	0.5-2mm straw colonies
<i>Bacillus subtilis</i>	ATCC® 6633	WDCM00003	0.5-2mm straw colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
PLATE COUNT AGAR (ISO) (CM0325)		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
N/A	Update to ISO	Change control	BT-CC-1902

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
X.L.D. MEDIUM CM0469		

X.L.D. MEDIUM

CM0469

Typical Formula*

	grams per litre	
Yeast extract		3.0
L-Lysine HCl		5.0
Xylose		3.75
Lactose		7.5
Sucrose		7.5
Sodium desoxycholate		1.0
Sodium chloride		5.0
Sodium thiosulphate		6.8
Ammonium iron (III) citrate		0.8
Phenol red		0.08
Agar		12.5

* adjusted as required to meet performance standards

Directions

Suspend 53g in 1 litre of distilled water. With frequent agitation, bring to the boil to dissolve completely. Cool to 50°C. Mix well and pour into sterile Petri dishes. DO NOT AUTOCLAVE. DO NOT OVERHEAT.

Physical Characteristics

Straw/pink, free-flowing powder
 Colour on reconstitution - red
 Moisture level - less than or equal to 7%
 pH 7.4 ± 0.2 at 25°C
 Clarity - clear
 Gel strength - firm, comparable to 12.5g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Reactions after incubation at 37 ± 2°C for 24 ± 3 hours


Inoculation with mixed cultures using diminishing sweep technique

Medium is challenged with 1E+03 to 1E+05 colony-forming units (cfu) of *Salmonella* and *Shigella* spp. and 1E+05 to 1E+07 cfu for *Escherichia coli* ATCC® 8739.

Salmonella abony

NCTC6017

1-3mm red colonies, black centre

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
X.L.D. MEDIUM CM0469		

<i>Salmonella enteritidis</i>	ATCC®13076	1-2mm red colonies, black centre
<i>Salmonella typhimurium</i>	ATCC®14028	1-2mm red colonies, black centre
<i>Salmonella virchow</i>	NCTC5742	1-2mm red colonies, black centre
<i>Salmonella arizonae</i>	ATCC®13314	1-3mm red colonies, black centre
<i>Salmonella nottingham</i>	NCTC7832	1-3mm red colonies, black centre
<i>Shigella sonnei</i>	ATCC®9290	0.5-7mm irregular/smooth red colonies
<i>Shigella flexneri</i>	ATCC®12022	0.5-2mm irregular, red colonies

In mixed culture, using the diminishing sweep technique, a satisfactory result is represented by diagnostic reactions of Salmonellae and Shigellae strains and *Escherichia coli*. Clear differentiation must be seen and is based on the colour and morphology of the colonies.

Inoculation with pure cultures

Medium is challenged with 10-100 colony-forming units

<i>Pseudomonas aeruginosa</i>	ATCC®9027	No growth or 0.5-2mm red colonies
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For *Pseudomonas aeruginosa* ATCC®9027, a satisfactory result is represented by recovery equal to or less than 90% of the control medium.

<i>Proteus mirabilis</i>	ATCC®12453	0.5-2mm orange/red colonies, with or without black centre, no swarming
<i>Proteus mirabilis</i>	ATCC®29906	0.5-2mm orange/red colonies, with or without black centre, no swarming
<i>Serratia marcescens</i>	ATCC®8100	1-2mm orange/yellow colonies
<i>Citrobacter freundii</i>	ATCC®8090	0.5-2mm yellow colonies
<i>Klebsiella pneumoniae</i>	ATCC®29665	2-4mm yellow, mucoid colonies

Other pure cultures are inhibited or shall produce colonies with a negative diagnostic reaction.

Medium is challenged with 1E+04 to 1E+06 colony-forming units

<i>Staphylococcus aureus</i>	ATCC®6538	No growth
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Negative strains are inhibited.

Inoculation using diminishing sweep technique

Medium is challenged with 1E+04 to 1E+06 colony-forming units

<i>Escherichia coli</i>	ATCC®11775	No growth or 0.5-4mm yellow colonies
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Escherichia coli ATCC®11775 is inhibited or shall produce colonies with a negative diagnostic reaction.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
X.L.D. MEDIUM CM0469		

Medium is challenged with 1E+04 to 1E+06 colony-forming units

Shigella sonnei ATCC®25931 0.5-7mm irregular/smooth red colonies

Shigella sonnei ATCC®25931 shall produce colonies with a positive diagnostic reaction.

Equivalent results are obtained after incubation at 30-35°C for 24 hours.

Testing performed in accordance with ISO11133:2014

Reactions after incubation at 37 ± 2°C for 24 ± 3 hours

Medium is challenged with 50-120 colony-forming units

Salmonella enteritidis ATCC®13076 WDCM00030 1-3mm red colonies, black centre
Salmonella typhimurium ATCC®14028 WDCM00031 1-3mm red colonies, black centre

A satisfactory result is represented by recovery of equal to or greater than 70% of the control medium.

Medium is challenged with 1E+04 to 1E+05 colony-forming units

Escherichia coli ATCC®8739 WDCM00012 No growth or 0.5-4mm yellow cols
Escherichia coli ATCC®25922 WDCM00013 No growth or 0.5-4mm yellow cols


Inhibited strains shall produce no growth or at least a 1 log (10) reduction with a negative diagnostic reaction when compared to the control medium.

Inoculation using diminishing sweep technique

Medium is challenged with 1E+04 to 1E+06 colony-forming units

Enterococcus faecalis ATCC®29212 WDCM00087 No growth
Enterococcus faecalis ATCC®19433 WDCM00009 No growth

Negative strains are inhibited.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
X.L.D. MEDIUM CM0469		

Testing performed in accordance with current CLSI M22 A

Reactions after incubation at 35°C for 18-24 hours

Medium is challenged with 10-100 colony-forming units

<i>Shigella flexneri</i>	ATCC®12022	0.5-2mm irregular, red colonies
<i>Salmonella typhimurium</i>	ATCC®14028	1-2mm red colonies, black centre

A satisfactory result is represented by recovery of equal to or greater than 70% of the control medium.

Medium is challenged with 1E+04 to 1E+06 colony-forming units


<i>Enterococcus faecalis</i>	ATCC®29212	No growth
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Negative strains are inhibited.

Medium is challenged with 1E+04 to 1E+06 colony-forming units


<i>Escherichia coli</i>	ATCC®25922	No growth or 0.5-4mm yellow cols
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Inhibited strains shall produce no growth or at least a 1 log (10) reduction with a negative diagnostic reaction when compared to the control medium.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
X.L.D. MEDIUM CM0469		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Microbiological Tests	Update to specification for <i>Shigella sonnei</i>	Change control	BT-CC-1911
Microbiological Tests	Salmonella and Shigella mixed culture testing changed from low number quantitative to high number qualitative testing.	Change control	BT-CC-2398

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
BUFFERED PEPTONE WATER (CM0509)		

BUFFERED PEPTONE WATER

CM0509

Formula

Peptone	grams per litre	10.0
Sodium chloride		5.0
Di-sodium phosphate		3.5
Potassium dihydrogen phosphate		1.5

Directions

Add 20g to 1 litre of distilled water. Mix well and distribute into final containers. Sterilize by autoclaving at 121°C for 15 minutes.

Physical Characteristics

Straw, free flowing powder
 Colour on reconstitution - straw 2-3
 Moisture level - less than 7%
 pH - 7.2 ± 0.2 at 25°C
 Clarity - clear (single and double strength broth)
 Buffering Capacity Test - passes test

Microbiological Tests Using Optimum Inoculum Dilution


Control Medium: Tryptone Soya Agar

Reactions after incubation at 37 ± 2°C for 18 ± 2 hours

Medium is challenged with 10-100 colony forming units

<i>Salmonella nottingham</i>	NCTC 7832	Turbid growth
<i>Escherichia coli</i>	ATCC® 11775	Turbid growth

A satisfactory result is represented by visible growth.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
BUFFERED PEPTONE WATER (CM0509)		

Testing performed in accordance with ISO11133:2014

Reactions after incubation at 37 ± 2°C for 18 ± 2 hours

Medium is challenged with 10-100 colony forming units

<i>Salmonella typhimurium</i>	ATCC® 14028	WDCM 00031	Turbid growth
<i>Salmonella enteritidis</i>	ATCC® 13076	WDCM 00030	Turbid growth
<i>Escherichia coli</i>	ATCC® 8739	WDCM 00012	Turbid growth
<i>Escherichia coli</i>	ATCC® 25922	WDCM 00013	Turbid growth

A satisfactory result is represented by visible growth from an inoculum of 10-100 colony forming units.


Testing performed in accordance with ISO22964:2017

Reactions after incubation at 36 ± 2°C for 18 ± 2 hours

Medium is challenged with 10-100 colony forming units


<i>Cronobacter sakazakii</i>	ATCC® 29544	WDCM 00214	Turbid growth
<i>Cronobacter muytjensii</i>	ATCC® 51329	WDCM 00213	Turbid growth

A satisfactory result is represented by visible growth from an inoculum of 10-100 colony forming units.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
BUFFERED PEPTONE WATER (CM0509)		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire document	Update to new template and addition of ISO22964:2017 section	Change control	BT-CC-1531

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
MILK PLATE COUNT AGAR CM0681		

MILK PLATE COUNT AGAR **CM0681**
(Plate Count Agar with antibiotic free skim milk powder)

Typical Formula*

Tryptone	grams per litre	5.0
Yeast extract		2.5
Glucose		1.0
Antibiotic free skim milk		1.0
Agar		10.0

* adjusted as required to meet performance standards

Directions

Suspend 19.5g in 1 litre of distilled water. Bring to the boil to dissolve completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C. Mix well and pour into sterile Petri dishes or hold at 45°C when using the pour plate technique.

Physical Characteristics

Straw, free-flowing powder
 Colour on reconstitution - straw 1-2
 Moisture level - less than 7%
 pH 6.9 ± 0.1 at 25°C
 Molten clarity - clear or slight haze
 Gel strength - firm, comparable to 10.0g/litre of agar

Thermophiles and mesophiles shall be absent after incubation at 55°C and 37°C for 3 days.

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar


Inoculation using pour plate technique

Reactions after incubation at 30 ± 2°C for 48 ± 2 hours

Medium is challenged with 10-100 colony-forming units

<i>Staphylococcus aureus</i>	ATCC® 6538	0.5-2mm straw colonies
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A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
MILK PLATE COUNT AGAR CM0681		

Testing performed in accordance with ISO11133:2014


Reactions after incubation at 30 ± 2°C for 72 ± 3 hours

Pour plate technique

Medium is challenged with 50-120 colony forming units

<i>Escherichia coli</i>	ATCC® 25922	WDCM00013	1-3mm straw colonies
<i>Escherichia coli</i>	ATCC® 8739	WDCM00012	1-3mm straw colonies
<i>Staphylococcus aureus</i>	ATCC® 25923	WDCM00034	0.5-2mm straw colonies
<i>Bacillus subtilis</i>	ATCC® 6633	WDCM00003	0.5-2mm straw colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 70% of the control medium.

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OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION		
MILK PLATE COUNT AGAR CM0681		

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Creation of ISO11133 section	Update to include testing of ISO11133:2014	Change control	BT-CC-1217