OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

YEAST EXTRACT AGAR CM0019

YEAST EXTRACT AGAR **CM0019**

Typical Formula*

	grams per litre
Yeast extract	3.0
Peptone	5.0
Agar	15.0

* adjusted as required to meet performance standards

Directions

Suspend 23g 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.

Physical Characteristics

Light straw, free-flowing powder
Colour on reconstitution - straw 2-3
Moisture level - less than or equal to 7%
pH 7.2 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 15.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar and Yeast Extract Agar, where appropriate

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

Medium is challenged with 10-100 colony-forming units

Enterococcus faecalis	ATCC®19433	0.25-1mm cream colonies
Staphylococcus aureus	ATCC®9144	0.5-1.5mm cream colonies
Pseudomonas aeruginosa	ATCC®27853	1-2mm straw colonies with/without green pigmentation
Proteus mirabilis	NCTC10975	0.25-1mm pale straw colonies

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

YEAST EXTRACT AGAR CM0019

Testing performed in accordance with ISO11133:2014

Reactions after incubation at 36 ± 2°C for 44 ± 4 hours

Medium is challenged with 50-120 colony-forming units

Escherichia coli	ATCC®8739	WDCM00012	1-3mm straw colonies
Escherichia coli	ATCC®25922	WDCM00013	1-3mm straw colonies
Bacillus subtilis	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.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

YEAST EXTRACT AGAR CM0019

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire document	Updating to current format and correcting minor errors	New format for upload to Thermofisher website	N/A

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BUFFERED PEPTONE WATER (ISO) CM1049

BUFFERED PEPTONE WATER (ISO) **CM1049**

Typical Formula*

Peptone	grams per litre	10.0
Sodium chloride		5.0
Disodium hydrogen phosphate (anhydrous)		3.5
Potassium dihydrogen phosphate		1.5

* adjusted as required to meet performance standards

Directions

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

Physical Characteristics

Light straw to straw, free-flowing powder
Colour on reconstitution - straw 1 to straw 3
Moisture level - less than or equal to 7%
pH 7.0 ± 0.2 at 25°C
Clarity - clear
Buffering capacity test - passes test

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

Inoculate 9ml of the medium with 1ml of the test organism containing more than or equal to 5E+04 cfu/ml. At time zero (0 minutes) and after holding at 20-25°C for 45minutes to 1 hour (for *Escherichia coli and Staphylococcus aureus*) or 18-22°C for 1 hour ± 5 minutes (for *Listeria monocytogenes*), subculture onto control medium.

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

Tested as a non-selective pre-enrichment broth

Medium is challenged with 10-100 colony forming units

Salmonella nottingham	NCTC7832	Turbid growth
Salmonella poona	NCTC4840	Turbid growth
Escherichia coli	ATCC®11775	Turbid growth

A satisfactory result is represented by visible growth.

Testing performed in accordance with ISO11133:2014

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

Tested as a non-selective pre-enrichment broth

Medium is challenged with 10-100 colony forming units

Salmonella typhimurium	ATCC®14028	WDCM00031	Turbid growth
Salmonella enteritidis	ATCC®13076	WDCM00030	Turbid growth
Escherichia coli	ATCC®25922	WDCM00013	Turbid growth
Escherichia coli	ATCC®8739	WDCM00012	Turbid growth

A satisfactory result is represented by visible growth.

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

Tested as a diluent

Medium is challenged with 50-150 colony forming units

Escherichia coli	ATCC®8739	WDCM00012	1-2mm white/grey colonies
Escherichia coli	ATCC®25922	WDCM00013	1-2mm white/grey colonies
Staphylococcus aureus	ATCC®25923	WDCM00034	0.5-1mm white/grey colonies
Listeria monocytogenes	ATCC®35152	WDCM00109	1-2mm white/grey colonies
Listeria monocytogenes	ATCC®13932	WDCM00021	1-2mm white/grey colonies

A satisfactory result is represented by recovery of ± 30% of the Control cfu (0 minutes) after holding at 20-25°C for 45 minutes (*Escherichia coli and Staphylococcus aureus*) or 18-22°C for 1 hour (*Listeria monocytogenes*).

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BUFFERED PEPTONE WATER (ISO) CM1049

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

Cronobacter sakazakii	ATCC®29544	WDCM00214	Turbid growth
Cronobacter muytjensii	ATCC®51329	WDCM00213	Turbid growth

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BUFFERED PEPTONE WATER (ISO) CM1049

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Physical characteristics	Change of colour	Change control	MOC-2024-1290

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

CHROMOGENIC COLIFORM AGAR CM1205

CHROMOGENIC COLIFORM AGAR **CM1205**

Typical Formula*

	grams per litre
Enzymatic digest of casein	1.0
Yeast extract	2.0
Sodium chloride	5.0
Sodium dihydrogen phosphate dihydrate $2H_2O$	2.2
Di-sodium hydrogen phosphate	2.7
Sodium pyruvate	1.0
Sorbitol	1.0
Tryptophan	1.0
Tergitol® 15-S-7	0.15
6-Chloro-3-indoxyl-β-D-galactopyranoside	0.2
5-Bromo-4-chloro-3-indoxyl-β-D-glucuronic acid	0.1
IPTG	0.1
Agar	13.55

* adjusted as required to meet performance standards

Directions

Suspend 30g in 1 litre of distilled water. With frequent agitation, bring gently to the boil to dissolve completely. Cool to 50°C. Mix well and pour into sterile Petri dishes. DO NOT AUTOCLAVE.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution – straw 1-2
Moisture level - less than or equal to 7%
pH 6.8 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 13.55g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Reactions after incubation at 36 ± 2 °C for 21-24 hours

Inoculation using the membrane filtration technique

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

CHROMOGENIC COLIFORM AGAR CM1205

Medium is challenged with 50-120 colony-forming units

Escherichia coli	ATCC®25922	WDCM00013	0.5-2mm dark blue to violet colonies
Escherichia coli	ATCC®8739	WDCM00012	0.5-2mm dark blue to violet colonies
Enterobacter aerogenes	ATCC®13048	WDCM00175	0.5-2mm pink to red colonies
Citrobacter freundii	ATCC®43864	WDCM00006	0.5-2mm pink to red colonies

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

Inoculation using the diminishing sweep technique

Medium is challenged with 1E+03 to 1E+04 colony-forming units

Pseudomonas aeruginosa	ATCC®10145	WDCM00024	0.5 to 2mm colourless/cream colonies

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

Enterococcus faecalis	ATCC®29212	WDCM00087	Partial to complete inhibition
Enterococcus faecalis	ATCC®19433	WDCM00009	Partial to complete inhibition

For test strains inoculated using diminishing sweep technique, a satisfactory result is represented by growth in accordance with the specification.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

CHROMOGENIC COLIFORM AGAR CM1205

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire Document	Creation of new MBD-BT-SPEC	New document	N/A

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

YEAST EXTRACT AGAR CM0019

YEAST EXTRACT AGAR **CM0019**

Typical Formula*

	grams per litre
Yeast extract	3.0
Peptone	5.0
Agar	15.0

* adjusted as required to meet performance standards

Directions

Suspend 23g 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.

Physical Characteristics

Light straw, free-flowing powder
Colour on reconstitution - straw 2-3
Moisture level - less than or equal to 7%
pH 7.2 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 15.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar and Yeast Extract Agar, where appropriate

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

Medium is challenged with 10-100 colony-forming units

Enterococcus faecalis	ATCC®19433	0.25-1mm cream colonies
Staphylococcus aureus	ATCC®9144	0.5-1.5mm cream colonies
Pseudomonas aeruginosa	ATCC®27853	1-2mm straw colonies with/without green pigmentation
Proteus mirabilis	NCTC10975	0.25-1mm pale straw colonies

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

YEAST EXTRACT AGAR CM0019

Testing performed in accordance with ISO11133:2014

Reactions after incubation at 36 ± 2°C for 44 ± 4 hours

Medium is challenged with 50-120 colony-forming units

Escherichia coli	ATCC®8739	WDCM00012	1-3mm straw colonies
Escherichia coli	ATCC®25922	WDCM00013	1-3mm straw colonies
Bacillus subtilis	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.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

YEAST EXTRACT AGAR CM0019

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire document	Updating to current format and correcting minor errors	New format for upload to Thermofisher website	N/A

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BAIRD-PARKER MEDIUM CM0275

BAIRD-PARKER MEDIUM **CM0275**

Typical Formula*

Tryptone	grams per litre	10.0
'Lab-Lemco' powder		5.0
Yeast extract		1.0
Sodium pyruvate		10.0
Glycine		12.0
Lithium chloride		5.0
Agar		20.0

* adjusted as required to meet performance standards

Directions

Suspend 63g 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 and aseptically add 50ml of Egg Yolk Tellurite Emulsion (SR0054). Mix well and pour into sterile Petri dishes. Alternatively, 50ml of Egg Yolk Emulsion (SR0047) and 3ml of Potassium Tellurite 3.5% (SR0030) per litre of medium may be used.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution - straw 2-3
Moisture level - less than or equal to 7.0%
pH 6.8 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 20.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Tested with the addition of 5% v/v Egg Yolk Tellurite Emulsion SR0054

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

Staphylococcus aureus	ATCC®9144	Pinpoint black colonies with no zones to 1.5mm shiny black colonies with clear zones
Staphylococcus epidermidis	ATCC®14990	No growth or ppt-1mm black colonies, no zones

Reactions after incubation at 37 ± 2°C for 48 ± 2 hours

Medium is challenged with 10-100 colony-forming units

Staphylococcus aureus	ATCC®9144	1-3mm shiny black colonies, white and clear zones

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

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

Inoculation using diminishing sweep technique

Staphylococcus epidermidis	ATCC®14990	No growth or ppt-1mm black colonies, no zones
Proteus mirabilis	ATCC®29906	No growth or 1-3mm brown/black colonies, no zones

Staphylococcus epidermidis ATCC®14990 and *Proteus mirabilis* ATCC®29906 are inhibited or shall produce colonies with a negative diagnostic reaction (i.e. without white and clear zones).

Testing performed in accordance with ISO11133: 2014

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

Staphylococcus aureus	ATCC®25923	WDCM00034	Pinpoint black colonies with no zones to 1.5mm shiny black colonies with clear zones
Staphylococcus aureus	ATCC®6538	WDCM00032	Pinpoint black colonies with no zones to 1.5mm shiny black colonies with clear zones
Staph. saprophyticus	ATCC®15305	WDCM00159	No growth or ppt-1mm black colonies, no zones
Staphylococcus epidermidis	ATCC®12228	WDCM00036	No growth or ppt-1mm black colonies, no zones

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BAIRD-PARKER MEDIUM CM0275

Reactions after incubation at 37 ± 2°C for 48 ± 2 hours

Medium is challenged with 50-120 colony-forming units

Staphylococcus aureus	ATCC®25923	WDCM00034	1-3mm shiny black colonies, white and clear zones
Staphylococcus aureus	ATCC®6538	WDCM00032	1-3mm shiny black colonies, white and clear zones

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

Medium is challenged with 1E+03 to 1E+04 colony-forming units

Staph. saprophyticus	ATCC®15305	WDCM00159	No growth or 0.5-2mm black colonies, no zones
Staphylococcus epidermidis	ATCC®12228	WDCM00036	No growth or ppt-1mm black colonies, no zones

Staphylococcus saprophyticus ATCC®15305 and *Staphylococcus epidermidis* ATCC®12228 are inhibited or shall produce colonies with a negative diagnostic reaction (i.e. without white and clear zones).

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

Inoculation using diminishing sweep technique

Escherichia coli	ATCC®25922	WDCM00013	No growth
Escherichia coli	ATCC®8739	WDCM00012	No growth

Negative strains are inhibited.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BAIRD-PARKER MEDIUM CM0275

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire document	Updating to current format and correcting minor errors	New format for upload to Thermofisher website	N/A

Distribution: Central File

Date: 22/11/12
Supersedes: 05/11/09

OXOID QUALITY ASSURANCE
PRODUCT SPECIFICATION

MODIFIED SEMI-SOLID RAPPAPORT VASSILIADIS MEDIUM BASE (MSRV) CM0910

Typical Formula*

Tryptose	grams per litre	4.59
Hydrolysed casein		4.59
Sodium chloride		7.34
Potassium dihydrogen phosphate		1.47
Magnesium chloride (anhydrous)		10.93
Malachite green oxalate		0.037
Agar		2.7

* adjusted as required to meet performance standards

Directions
Suspend 15.8g in 500ml of distilled water. With frequent agitation, bring to the boil to dissolve completely. Cool to 50°C and aseptically add the contents of 1 vial of MSRV Selective Supplement (SR0161E) reconstituted as directed. Mix well and pour into sterile Petri dishes. Air-dry for at least one hour. This medium is very hygroscopic and must be protected from moisture. DO NOT AUTOCLAVE.

Physical Characteristics

Green, free-flowing coarse powder
Colour on reconstitution - blue
Moisture level - less than 7%
pH 5.4 ± 0.2 at 25°C
Clarity - clear
Gel strength - semi-solid, comparable to 2.7g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Reactions after incubation at 42°C for 24 hours

Incubate plates in an upright position - do not exceed 24 hours.

Tested with the addition of Modified Semi-Solid Rappaport Vassiliadis (MSRV) Selective Supplement SR0161

Medium is challenged with 1E+03 to 1E+05 colony-forming units

Salmonella typhimurium	ATCC® 14028	Straw colonies & straw/white halo
Salmonella enteritidis	ATCC® 13076	Straw colonies & straw/white halo
Salmonella nottingham	NCTC 7832	Straw colonies & straw/white halo
Citrobacter freundii	ATCC® 8090	No growth or straw colonies & straw/white halo

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

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

Escherichia coli	ATCC® 8739	Partial to complete inhibition
Proteus mirabilis	ATCC® 12453	Partial to complete inhibition

Negative strains shall produce partial to complete inhibition

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

PALCAM AGAR BASE CM0877

PALCAM AGAR BASE **CM0877**

Typical Formula*

	grams per litre
Columbia Blood Agar Base	39.0
Yeast extract	3.0
Glucose	0.5
Aesculin	0.8
Ferric ammonium citrate	0.5
Mannitol	10.0
Phenol red	0.08
Lithium chloride	15.0

* adjusted as required to meet performance standards

Directions

Suspend 34.5g in 500ml of distilled water. Bring to the boil to dissolve completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of 1 vial of PALCAM Selective Supplement (SR0150E) reconstituted as directed. Mix well and pour into sterile Petri dishes.

Physical Characteristics

Straw/pink, free-flowing powder
Colour on reconstitution - red
Moisture level - less than or equal to 7%
pH - 7.2 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 10.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Columbia Blood Agar Base enriched with 5% v/v horse blood

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

Tested with the addition of PALCAM Selective Supplement SR0150

Medium is challenged with 10-100 colony-forming units

Listeria monocytogenes	ATCC®7644	0.5-2mm brown/black colonies and halo
Listeria monocytogenes	ATCC®13932	0.5-2mm brown/black colonies and halo

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

PALCAM AGAR BASE CM0877

A satisfactory result is represented by recovery of positive strains equal to or greater than 50% of the control medium.

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

Enterococcus faecalis	ATCC®29212	No growth
Enterococcus faecalis	ATCC®19433	No growth
Staphylococcus aureus	ATCC®25923	No growth
Escherichia coli	ATCC®25922	No growth
Escherichia coli	ATCC®8739	No growth

Negative strains are inhibited.

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

Tested with the addition of PALCAM Selective Supplement SR0150

Medium is challenged with 10-100 colony-forming units

Listeria monocytogenes	ATCC®7644	0.5-2mm brown/black colonies and halo
Listeria monocytogenes	ATCC®13932	0.5-2mm brown/black colonies and halo

A satisfactory result is represented by recovery of positive strains equal to or greater than 50% of the control medium.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

PALCAM AGAR BASE CM0877

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Microbiological characteristics	Updated colony morphology for *Listeria* species incubated under microaerophilic conditions	Change control	MOC-2024-0712
	Added section for reactions under aerobic conditions		

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

FRASER SELECTIVE SUPPLEMENT SR0156E

FRASER SELECTIVE SUPPLEMENT **SR0156E**

Formula

Vial contents (each vial is sufficient to supplement 500ml of medium)

Ammonium iron (III) citrate	250.0 mg
Nalidixic acid	10.0 mg
Acriflavine hydrochloride	12.5 mg

Description

A selective supplement for the detection of *Listeria monocytogenes*.

Directions

Aseptically add 5ml of 1:1 ethanol:sterile distilled water to 1 vial and mix gently to dissolve. Aseptically add the vial contents to 500ml 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
Appearance of reconstituted supplement - orange/brown particulate solution
Sterility - passes test

Microbiological Tests Using Optimum Inoculum Dilution

Control Media: Brilliance™ Listeria Agar (ISO) or Columbia Blood Agar Base enriched with 5% v/v horse blood, where appropriate.

Tested in Fraser Broth Base CM0895

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

Inoculate 10ml quantities of medium to achieve 1-10 colony-forming units/ml (cfu/ml) of *Listeria* spp. Incubate broths at 37 ± 2°C for 24 ± 2 hours. Subculture onto Brilliance™ Listeria Agar (ISO) (CM1212, SR0257 & SR0258) and incubate plates at 37 ± 2°C for 24 to 48 hours.

Listeria monocytogenes	ATCC®7644
Listeria monocytogenes	ATCC®13932

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

Positive strains shall produce aesculin hydrolysis after 48 hours.

Reactions after incubation at 37 ± 2°C for 48 ± 2 hours

Inoculate 10ml quantities of medium to achieve 1E+03 to 1E+04 cfu/ml. Incubate broths at 37°C for 48 hours.

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

Negative strains shall produce no aesculin hydrolysis after 48 hours.

Testing performed in accordance with ISO11133:2014

Inoculation with mixed cultures

Inoculate 10ml quantities of medium to achieve 1-10 colony-forming units/ml (cfu/ml) of *Listeria* spp., 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 37 ± 2°C for 24 ± 2 hours. Subculture onto Brilliance™ Listeria Agar (ISO) (CM1212, SR0257 & SR0258) and incubate plates at 37 ± 2°C for 24 ± 2 hours

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

Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

FRASER SELECTIVE SUPPLEMENT SR0156E

Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth

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

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 37 ± 2°C for 24 ± 2 hours. Subculture onto Brilliance™ Listeria Agar (ISO) (CM1212, SR0257 & SR0258) and Tryptone Soya Agar (CM0131) then incubate plates at 37 ± 2°C for 24 ± 2 hours.

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

Escherichia coli	ATCC®8739	WDCM00012	No growth (CM1212, SR0257 & SR0258)
Escherichia coli	ATCC®8739	WDCM00012	Cream colonies (CM0131)
Escherichia coli	ATCC®25922	WDCM00013	No growth (CM1212, SR0257 & SR0258)
Escherichia coli	ATCC®25922	WDCM00013	Cream colonies (CM0131)
Enterococcus faecalis	ATCC®19433	WDCM00009	No growth (CM1212, SR0257 & SR0258)
Enterococcus faecalis	ATCC®19433	WDCM00009	Cream colonies (CM0131)

Enterococcus faecalis	ATCC®29212	WDCM00087	No growth (CM1212, SR0257 & SR0258)
Enterococcus faecalis	ATCC®29212	WDCM00087	Cream colonies (CM0131)

A satisfactory result is represented by no growth of *Escherichia coli* and *Enterococcus faecalis* on Brilliance™ Listeria Agar (ISO) and <100 cfu on Tryptone Soya Agar.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

FRASER SELECTIVE SUPPLEMENT SR0156E

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Physical Characteristics	Added appearance of supplement after reconstitution	Change control	MOC-2025-0365

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 13485:2016 & EN ISO 13485:2016

This is to certify that:

Oxoid Limited
Wade Road
Basingstoke
Hampshire
RG24 8PW
United Kingdom

Holds Certificate Number: MD 80930

and operates a Quality Management System which complies with the requirements of ISO 13485:2016 & EN ISO 13485:2016 for the following scope:

The design, development and manufacture of laboratory diagnostics for the detection, isolation, identification and susceptibility testing of micro-organisms.

For and on behalf of BSI:

Graeme Tunbridge, Senior Vice President Global Regulatory & Quality

Original Registration Date: 2004-01-26
Latest Revision Date: 2024-10-16

Effective Date: 2024-11-15
Expiry Date: 2027-11-14

...making excellence a habit.™

Certificate No: MD 80930

Location	Registered Activities
Oxoid Limited Wade Road Basingstoke Hampshire RG24 8PW United Kingdom	The design, development and manufacture of laboratory diagnostics for the detection, isolation, identification and susceptibility testing of micro-organisms.
Oxoid Limited Unit B, Logisitics City Brunel Road Houndmills Industrial Estate Basingstoke Hampshire RG21 6XL United Kingdom	Warehousing and Customer services

Original Registration Date: 2004-01-26

Latest Revision Date: 2024-10-16

Effective Date: 2024-11-15

Expiry Date: 2027-11-14

remel

McFARLAND EQUIVALENCE TURBIDITY STANDARDS

INTENDED USE
Remel McFarland Equivalence Turbidity Standards are used as standards in adjusting densities of bacterial suspensions.

SUMMARY AND EXPLANATION
Original McFarland standards were prepared by adding $BaCl_2$ to H_2SO_4, resulting in $BaSO_4$ precipitation.[1] The McFarland Equivalence Turbidity Standards are prepared from suspensions of uniform polystyrene microparticles with absorbance values similar to the original $BaSO_4$ standards. Stability of suspensions, shelf life, and ease of comparison have been improved with the McFarland Equivalence Turbidity Standards.

PRINCIPLE
Polystyrene microparticles are suspended in a special buffer and adjusted to an acceptable absorbance range using a spectrophotometer with a 1 cm light path set at 600 nm or 625 nm, depending on the standard used.[2,3] Adjusting a bacterial suspension turbidity to the McFarland Equivalence Turbidity Standard produces bacterial counts in an expected range.

REAGENTS*
Electrically charged polystyrene microparticles suspended in a special buffer.
*Adjusted as required to meet performance standards.

PRECAUTIONS
This product is for Laboratory Use only and should be used by properly trained individuals. Directions should be read and followed carefully.

STORAGE
This product is ready for use and no further preparation is necessary. Store product in its original container at room temperature (20-25°C). Do not freeze or overheat.

PRODUCT DETERIORATION
This product should not be used if (1) there is evidence of dehydration, (2) the product is contaminated, (3) the color has changed, (4) the expiration date has passed, or (5) there are other signs of deterioration.

MATERIALS REQUIRED BUT NOT SUPPLIED
(1) Loop sterilization device, (2) Inoculating loops, swabs, or transfer pipettes, (3) Sterile tube, (4) Saline or broth, (5) Light source.

PROCEDURE
1. Invert the McFarland Equivalence Turbidity Standard gently to fully suspend the polystyrene microparticles.
2. Visually compare the turbidity of an actively growing broth culture or a bacterial suspension prepared from an 18-24 hour culture to the appropriate McFarland Standard. (**Note:** The bacterial suspension tubes should be of similar diameter as the McFarland Equivalence Turbidity Standard).
3. For visual comparison, use adequate light and read the tubes against the white card with contrasting black lines.
4. Equal obliteration or distortion of black lines indicates a turbidity match.

INTERPRETATION
Bacterial suspensions are standardized when distortion of black lines is equal to that of the corresponding McFarland Equivalence Turbidity Standard.

QUALITY CONTROL
All lot numbers of McFarland Equivalence Turbidity Standards have been tested spectrophotometrically and found to be acceptable.

LIMITATIONS

1. The use of broth media which is dark yellow, orange, or brown in color may result in bacterial suspensions of incorrect densities. Trial comparisons should be performed. Use adequate light to read the Standard and test broth against a white card with contrasting black lines.[2]
2. Visually comparing McFarland Equivalence Turbidity Standards and bacterial suspensions by use of backlight illumination could result in bacterial suspensions of incorrect densities.
3. Bacterial densities may be too heavy when colonies of *Haemophilus influenzae* ≤ 24 hours old are used to prepare suspensions.[3]
4. McFarland Equivalence Turbidity Standards are recommended when performing visual comparisons or when using a spectrophotometer adjusted to the proper setting.[4] Use with instruments which use alternative light sources, such as scattered light, has not been validated.

EXPECTED VALUES

Standard No.	0.5	1.0	2.0	3.0	4.0	5.0
Approximate Cell Density (x 10^8/ml)	1.5	3.0	6.0	9.0	12.0	15.0

PERFORMANCE CHARACTERISTICS

A study comparing McFarland Equivalence Turbidity Standards to barium sulfate standards resulted in agreement between the two methods.

BIBLIOGRAPHY

1. McFarland, J. 1907. JAMA. 14:1176-1178.
2. Clinical and Laboratory Standards Institute (CLSI). 2009. Performance Standards for Antimicrobial Disk Susceptibility Tests; Approved Standard, 10th ed. M2-A10. CLSI, Wayne, PA.
3. Doern, G.V. and R.N. Jones. 1988. Antimicrob. Agents Chemother. 32:1747-1753.
4. Lorian, V. 1986. Antibiotics in Laboratory Medicine, 2nd ed. Williams & Wilkins, Baltimore, MD.

PACKAGING

Each standard is packaged in a plastic case with a visual comparison card. Tube size is 15 x 103 mm and fits most spectrophotometers.

REF R20410, McFarland Equivalence Turbidity Standard 0.5.....Each
REF R20411, McFarland Equivalence Turbidity Standard 1.0.....Each
REF R20412, McFarland Equivalence Turbidity Standard 2.0.....Each
REF R20413, McFarland Equivalence Turbidity Standard 3.0.....Each
REF R20414, McFarland Equivalence Turbidity Standard 4.0.....Each
REF R20415, McFarland Equivalence Turbidity Standard 5.0.....Each
REF R20421, McFarland Equivalence Turbidity Standard Set .....Set*

*Contains 1 each of 0.5, 1.0, 2.0, 3.0, and 4.0 standards

Symbol Legend

REF	Catalog Number
IVD	In Vitro Diagnostic Medical Device
LAB	For Laboratory Use
	Consult Instructions for Use (IFU)
	Temperature Limitation (Storage Temp.)
LOT	Batch Code (Lot Number)
	Use By (Expiration Date)

IFU 20410, Revised May 21, 2009 Printed in U.S.A.

12076 Santa Fe Drive, Lenexa, KS 66215, USA
General Information: (800) 255-6730 Website: www.remel.com Email: remel@remel.com
Local/International Phone: (913) 888-0939 International Fax: (913) 895-4128

MULLER-KAUFFMANN TETRATHIONATE-NOVOBIOCIN BROTH (ISO) CM1048

MULLER-KAUFFMANN TETRATHIONATE-NOVOBIOCIN BROTH (ISO) (MKTTn) **CM1048**

Typical Formula*

Meat extract	grams per litre	4.3
Enzymatic digest of casein		8.6
Sodium chloride		2.6
Calcium carbonate		38.7
Sodium thiosulphate (anhydrous)		30.5
Ox bile		4.78
Brilliant green		0.0096

* adjusted as required to meet performance standards

Directions

Suspend 89.5g in 1 litre of distilled water and bring to the boil. Cool to 50°C and add, just prior to use, 20ml of iodine solution. Aseptically add the contents of 4 vials of Novobiocin Supplement (SR0181E) reconstituted as directed. Mix well to ensure even dispersion of the medium and dispense into sterile containers.

Iodine solution:	Iodine	20g
	Potassium iodide	25g
	Distilled water	100ml

Physical Characteristics

White / light green, free-flowing powder
Colour on reconstitution - light green
Moisture level - less than or equal to 7%
pH 8.0 ± 0.2 at 25°C (base medium)
Clarity - opaque

Microbiological Tests Using Optimum Inoculum Dilution

Control Media: Tryptone Soya Agar and XLD Medium

Tested with the addition of Novobiocin Supplement SR0181

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

Inoculation with pure cultures

Inoculate 10ml quantities of medium to achieve 1-15 colony-forming units/ml (cfu/ml) of *Salmonella* species. Incubate broths at 37 ± 2°C for 24 ± 3 hours. After incubation, subculture onto Tryptone Soya Agar (CM0131) and incubate plates at 37 ± 2°C for 24 ± 3 hours.

Salmonella virchow	NCTC5742	1-3mm straw colonies
Salmonella nottingham	NCTC7832	1-3mm straw colonies
Salmonella abony	NCTC6017	1-3mm straw colonies
Salmonella poona	NCTC 4840	1-3mm straw colonies

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

Inoculate 10ml quantities of medium to achieve 1E+02 to 1E+04 cfu/ml of *Escherichia coli*. Incubate broths at 37 ± 2°C for 24 ± 3 hours. After incubation, subculture onto Tryptone Soya Agar (CM0131) and incubate plates at 37 ± 2°C for 24 ± 3 hours.

Escherichia coli	ATCC®11775	No growth

Negative strains are inhibited or shall produce at least a 2 log(10) reduction.

Testing performed in accordance with ISO11133:2014

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

Inoculation with mixed cultures

Inoculate 10ml quantities of medium to achieve 1-10 cfu/ml of *Salmonella* species. To each add 1E+03 to 1E+04 cfu/ml of *Escherichia coli* and *Pseudomonas aeruginosa*. Incubate broths at 37 ± 2°C for 24 ± 3 hours. After incubation, subculture 10µl onto XLD Medium (CM0469) using diminishing sweep technique and incubate plates at 37 ± 2°C for 24 ± 3 hours.

Salmonella typhimurium	ATCC®14028	WDCM00031	1-2mm red colonies, black centre
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Pseudomonas aeruginosa*	ATCC®27853	WDCM00025	No growth or up to 1mm red colonies

Salmonella typhimurium	ATCC®14028	WDCM00031	1-2mm red colonies, black centre
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Pseudomonas aeruginosa*	ATCC®27853	WDCM00025	No growth or up to 1mm red colonies
Salmonella enteritidis	ATCC®13076	WDCM00030	1-2mm red colonies, black centre
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Pseudomonas aeruginosa*	ATCC®27853	WDCM00025	No growth or up to 1mm red colonies
Salmonella enteritidis	ATCC®13076	WDCM00030	1-2mm red colonies, black centre
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Pseudomonas aeruginosa*	ATCC®27853	WDCM00025	No growth or up to 1mm red colonies

A satisfactory result is represented by recovery of greater than 100 cfu of *Salmonella* species on XLD Medium (CM0469).

Inoculation with pure cultures

Inoculate 10ml quantities of medium to achieve 1E+03 to 1E+04 of *Escherichia coli* and *Enterococcus faecalis*. Incubate broths at 37 ± 2°C for 24 ± 3 hours. After incubation, subculture 10µl onto Tryptone Soya Agar (CM0131) using diminishing sweep technique and incubate plates at 37 ± 2°C for 24 ± 3 hours.

Escherichia coli	ATCC®8739	WDCM00012	No growth or 1-3mm cream colonies
Escherichia coli	ATCC®25922	WDCM00013	No growth or 1-3mm cream colonies
Enterococcus faecalis	ATCC®19433	WDCM00009	No growth or 0.5-1mm straw colonies
Enterococcus faecalis	ATCC®29212	WDCM00087	No growth or 0.5-1mm straw colonies

A satisfactory result is represented by growth of less than or equal to 100 cfu for *Escherichia coli* and less than or equal to 10 cfu for *Enterococcus faecalis* on Tryptone Soya Agar (CM0131).

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire document	Update to current format and correction of minor typographical errors.	Change control	MOC-2023-1137
Microbiological characteristics	Change of Pseudomonas aeruginosa reaction to allow for growth		

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

NUTRIENT AGAR CM0003

NUTRIENT AGAR CM0003

Typical Formula*

'Lab-Lemco' powder	grams per litre	1.0
Yeast extract		2.0
Peptone		5.0
Sodium chloride		5.0
Agar		15.0

* adjusted as required to meet performance standards

Directions

Suspend 28g 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.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution - straw 1-2
Moisture level - less than 7%
pH 7.4 ± 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.

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

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Nutrient Agar

Medium is challenged with 10-100 colony-forming units

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

Plain plates

Staphylococcus aureus	ATCC® 25923	1-2mm white/straw colonies
Pseudomonas aeruginosa	ATCC® 27853	1-3mm straw colonies

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

NUTRIENT AGAR CM0003

Enriched with 7% v/v horse blood

Streptococcus pyogenes	ATCC® 19615	0.25-1mm colourless colonies, β haemolysis
Streptococcus pneumoniae	ATCC® 6303	1-2mm grey/green colonies, α haemolysis
Streptococcus pneumoniae	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 in 5% CO_2 at 37 ± 2°C for 24 ± 2 hours
(for details, refer to Oxoid Manual - Atmosphere Generation Systems)

Enriched with 7% v/v horse blood

Haemophilus influenzae	ATCC® 19418	Pinpoint-0.25mm colourless 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 ISO11133:2014

Medium is challenged with 50-120 colony-forming units

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

Yersinia enterocolitica	ATCC® 23715	WDCM00160	1-3mm straw colonies
Yersinia enterocolitica	ATCC® 9610	WDCM00038	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 37 ± 2°C for 24 ± 2 hours

Escherichia coli	ATCC® 25922	WDCM00013	1-3mm straw colonies
Escherichia coli	ATCC® 8739	WDCM00012	1-3mm straw colonies
Salmonella typhimurium	ATCC® 14028	WDCM00031	1-3mm straw colonies
Salmonella enteritidis	ATCC® 13076	WDCM00030	1-3mm straw colonies

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

NUTRIENT AGAR CM0003

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-1196

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BRILLIANT GREEN BILE 2% BROTH CM0031

BRILLIANT GREEN BILE 2% BROTH **CM0031**

Typical Formula*

Peptone	grams per litre	10.0
Lactose		10.0
Ox-Bile (purified)		20.0
Brilliant green		0.0133

* adjusted as required to meet performance standards

Directions

Add 40g to 1 litre of distilled water. Mix well and distribute into containers fitted with Durham's tubes. Sterilize by autoclaving at 121°C for 15 minutes. Double strength broth - heat the dissolved broth at 100°C for 30 minutes - do not autoclave.

Physical Characteristics

Pale green, free-flowing powder
Colour on reconstitution - green
Moisture level less than or equal to 7%
pH 7.4 ± 0.2 at 25°C
Clarity - clear

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 30 ± 2°C for 24 ± 2 hours

Medium is challenged with 10-100 colony-forming units

Enterobacter aerogenes	NCTC9735	Turbid growth and gas

A satisfactory result is represented by visible growth and gas.

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

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

Staphylococcus aureus	ATCC®25923	No growth

Negative strains are inhibited.

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

Medium is challenged with 10-100 colony-forming units

Escherichia coli	ATCC®8739	Turbid growth and gas
Escherichia coli	ATCC®25922	Turbid growth and gas
Enterobacter aerogenes	NCTC9735	Turbid growth and gas
Citrobacter freundii	ATCC®43864	Turbid growth and gas

A satisfactory result is represented by visible growth and gas.

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

Medium is tested at double strength

Medium is challenged with 10-100 colony-forming units

Escherichia coli	ATCC®8739	Turbid growth and gas

A satisfactory result is represented by visible growth and gas.

Reactions after incubation at 37 ± 2°C for 48 ± 2 hours

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

Staphylococcus aureus	ATCC®25923	No growth

Medium is challenged with 1E+05 to 1E+06 colony-forming units

Enterococcus faecalis	ATCC®29212	No growth or turbid growth, no gas
Enterococcus faecalis	ATCC®19433	No growth or turbid growth, no gas

Enterococcus strains are inhibited or shall produce a maximum of a 2 log (10) increase when compared to the initial inoculum. Negative strains are inhibited or shall produce partial inhibition and no gas.

<u>*E. coli* confirmation test</u>

Reactions after incubation at 44 ± 1°C for 24 ± 2 hours

Escherichia coli	ATCC®25922	Turbid growth and gas
Escherichia coli	ATCC®8739	Turbid growth and gas
Enterobacter aerogenes	NCTC9735	No growth or turbid growth, no gas
Citrobacter freundii	ATCC®43864	No growth

<u>Gram +ve sporing anaerobes test</u>

Enriched with 10% v/v pasteurised milk

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

Clostridium perfringens	ATCC®13124	No gas

Reactions after incubation at 37 ± 2°C for 48 ± 2 hours

Clostridium perfringens	ATCC®13124	No gas

Reactions after incubation at 44 ± 2°C for 48 ± 2 hours

Clostridium perfringens	ATCC®13124	No gas

Testing performed in accordance with ISO11133:2014

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

Medium is challenged with 10-100 colony-forming units

Escherichia coli	ATCC®8739	WDCM00012	Turbid growth and gas
Escherichia coli	ATCC®25922	WDCM00013	Turbid growth and gas
Citrobacter freundii	ATCC®43864	WDCM00006	Turbid growth and gas

A satisfactory result is represented by visible growth and gas.

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

Medium is challenged with 1E+05 to 1E+06 colony-forming units

Enterococcus faecalis	ATCC®29212	WDCM00087	No growth to turbid growth, no gas
Enterococcus faecalis	ATCC®19433	WDCM00009	No growth to turbid growth, no gas

Enterococcus strains are inhibited or shall produce a maximum of a 2log(10) increase when compared to the initial inoculum. Negative strains are inhibited or shall produce partial inhibition and no gas.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BRILLIANT GREEN BILE 2% BROTH CM0031

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Microbiological characteristics	Tightening of initial cfu for non-target organisms	Change control	MOC-2025-2198

Distribution: Central File

Date: 20/03/17
Supersedes: 05/12/12

OXOID QUALITY ASSURANCE
PRODUCT SPECIFICATION

SABOURAUD DEXTROSE AGAR CM0041

Typical Formula*

Mycological peptone	grams per litre	10.0
Glucose		40.0
Agar		15.0

* adjusted as required to meet performance standards

Directions

Suspend 65g in 1 litre of distilled water. 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 7%
pH 5.6 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 15.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Sabouraud Dextrose Agar

Medium is challenged with 10-100 colony-forming units

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

Saccharomyces carlsbergensis	ATCC® 2700	2-6mm cream, domed colonies
Candida albicans	ATCC® 10231	2-6mm cream, domed colonies
Aspergillus brasiliensis	ATCC® 16404	Greater than 10mm colonies, white mycelia, black spores

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 ISO11133:2014

Reactions after incubation at 25 ± 2°C for 5 days

Medium is challenged with 50-120 colony-forming units

Saccharomyces cerevisiae	ATCC® 9763	WDCM00058	2-6mm cream, domed colonies
Aspergillus brasiliensis	ATCC® 16404	WDCM00053	Greater than 10mm colonies, white mycelia, black spores

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

Distribution: Central File

Date: 27/08/14
Supersedes: 05/10/12

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

UREA AGAR BASE — CM0053

Typical Formula*

Peptone	grams per litre	1.0
Glucose		1.0
Sodium chloride		5.0
Di-sodium phosphate		1.2
Potassium dihydrogen phosphate		0.8
Phenol red		0.012
Agar		15.0

* adjusted as required to meet performance standards

Directions

Suspend 2.4g in 95ml of distilled water. Bring to the boil to dissolve completely. Sterilize by autoclaving at 115°C for 20 minutes. Cool to 50°C and aseptically add the contents of 1 vial of Urea 40% Solution (SR0020K). Mix well, aseptically dispense 10ml amounts into sterile containers and allow to set in the slope position.

Physical Characteristics

Orange/pink, free-flowing powder
Colour on reconstitution - orange
Moisture level - less than 7%
pH 6.8 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 15.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Inoculate slopes of the medium with the test organisms.

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

Reactions after incubation at 30°C for 6 hours

Morganella morganii	ATCC® 25830	Weak urease +ve, pale pink slope, or negative
Proteus mirabilis	ATCC® 29906	Urease +ve, pink slope

Reactions after incubation at 30°C for 24 hours

Morganella morganii	ATCC® 25830	Urease +ve, pink slope
Klebsiella pneumoniae	ATCC® 13883	Weak urease +ve, pale pink slope
Shigella sonnei	ATCC® 25931	Urease -ve, no colour change
Enterobacter aerogenes	ATCC® 13048	Urease -ve, no colour change
Escherichia coli	ATCC® 25922	Urease -ve, no colour change
Escherichia coli	ATCC® 11775	Urease -ve, no colour change

Salmonella nottingham	NCTC 7832	Urease -ve, no colour change

Reactions after incubation at 30°C for up to 72 hours

Candida albicans	ATCC® 10231	Urease -ve, no colour change
Cryptococcus albidus	ATCC® 34140	Weak urease +ve, pink slope

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

MACCONKEY AGAR NO.3 CM0115

MACCONKEY AGAR NO.3 **CM0115**

Typical Formula*

Peptone	grams per litre	20.0
Lactose		10.0
Bile salts No.3		1.5
Sodium chloride		5.0
Neutral red		0.03
Crystal violet		0.001
Agar		15.0

* adjusted as required to meet performance standards

Directions

Suspend 51.5g 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.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution - dark red
Moisture level - less than or equal to 7%
pH 7.1 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 15.0g/litre of agar

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

MACCONKEY AGAR NO.3 CM0115

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

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

Medium is challenged with 10-100 colony-forming units

Escherichia coli	ATCC®8739	0.5-6mm pink colonies and bile precipitation
Salmonella virchow	NCTC5742	1-8mm straw colonies
Salmonella abony	NCTC6017	1-8mm straw colonies
Shigella sonnei	ATCC®25931	1-12mm straw colonies
Shigella boydii	NCTC11462	1-12mm straw colonies
Proteus mirabilis	ATCC®29906	1-8mm straw colonies, slight/no swarming

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

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

Staphylococcus aureus	ATCC®6538	No growth

Negative strains are inhibited.

Equivalent results are obtained after incubation at 30-35°C for 18-24 hours.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

MACCONKEY AGAR NO.3 CM0115

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

Proteus mirabilis	ATCC®12453	1-5mm straw colonies, no swarming
Salmonella typhimurium	ATCC®14028	1-7mm straw colonies
Escherichia coli	ATCC®25922	0.5-7mm pink colonies and bile precipitation

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

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

Enterococcus faecalis	ATCC®29212	No growth

Negative strains are inhibited.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

MACCONKEY AGAR NO.3 CM0115

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire Document	Correction of typographical/minor errors.	Change control	MOC-2023-0718
Microbiological Tests Using Optimum Inoculum Dilution	Correction to colony sizes.		

Distribution: Central File

Date: 07/03/17
Supersedes: 05/10/16

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BRILLIANT GREEN AGAR CM0263

Typical Formula*

Proteose peptone	grams per litre	10.0
Yeast extract		3.0
Lactose		10.0
Sucrose		10.0
Sodium chloride		5.0
Phenol red		0.08
Brilliant green		0.0125
Agar		12.0

* adjusted as required to meet performance standards

Directions

Suspend 50g 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.

Physical Characteristics

Straw/green, free-flowing powder
Colour on reconstitution - green/brown or red/brown
Moisture level - less than 7%
pH 6.9 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 12.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Reactions after incubation at 37°C for 18 hours

Medium is challenged with 10-100 colony-forming units

Salmonella enteritidis	ATCC® 13076	0.5-3mm red colonies and medium
Salmonella typhimurium	ATCC® 14028	0.5-3mm red colonies and medium
Salmonella virchow	NCTC 5742	1-2mm red colonies and medium

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 18 hours

Medium is challenged with 10-100 colony-forming units

Pseudomonas aeruginosa	ATCC® 9027	No growth or 0.5-2.5mm red colonies and medium
Escherichia coli	ATCC® 25922	No growth or pinpoint-2mm yellow/green colonies
Escherichia coli	ATCC® 11775	No growth or pinpoint-2mm yellow/green colonies
Enterobacter cloacae	ATCC® 13047	No growth or 0.5-2mm yellow/green colonies
Proteus mirabilis	ATCC® 12453	No growth or pinpoint colourless colonies with no swarming or slight swarming

For negative strains, a satisfactory result is represented by recovery equal to or less than 100% of the control medium.

Equivalent results obtained after incubation at 30-35°C for 18-24 hours.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

TRIPLE SUGAR IRON AGAR (ISO) (CM0277)

TRIPLE SUGAR IRON AGAR (ISO) **CM0277**

Typical Formula*

Meat extract	grams per litre	3.0
Yeast extract		3.0
Peptone		20.0
Sodium chloride		5.0
Lactose		10.0
Sucrose		10.0
Glucose		1.0
Iron (III) citrate		0.3
Sodium thiosulphate		0.3
Phenol red		0.024
Agar		12.0

* adjusted as required to meet performance standards

Directions

Suspend 65g in 1 litre of distilled water. Bring to the boil to dissolve completely. Mix well and distribute into final containers. Sterilize by autoclaving at 121°C for 15 minutes. Allow to set as slopes with 2.5cm butts.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution - red
Moisture level - less than 7%
pH 7.4 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 12.0g/litre of agar

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

TRIPLE SUGAR IRON AGAR (ISO) (CM0277)

Microbiological Tests Using Optimum Inoculum Dilution

Reactions after incubation at 37°C for 18 hours

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

	Slope	**Butt**	**H_2S**	**Gas**
Escherichia coli ATCC® 8739	A	AG	Negative	Positive
Escherichia coli ATCC® 11775	A	AG	Negative	Positive
Shigella sonnei ATCC® 25931	NC	A	Negative	Negative
Salmonella enteritidis ATCC® 13076	NC	AG	Positive	Positive

	Slope	**Butt**	**H_2S**	**Gas**
Salmonella typhimurium ATCC® 14028	NC	AG	Positive	Positive
Salmonella abony NCTC 6017	NC	AG	Positive	Positive
Salmonella nottingham NCTC 7832	NC	AG	Positive	Positive
Proteus hauseri ATCC® 13315	A	A	Positive	Negative
Enterobacter aerogenes ATCC® 13048	A	AG	Negative	Positive
Pseudomonas aeruginosa ATCC® 9027	Alk	Alk	Negative	Negative
Staphylococcus aureus ATCC® 6538	A	A	Negative	Negative

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

Equivalent results obtained after incubation at 30-35°C for 18-24 hours.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

TRIPLE SUGAR IRON AGAR (ISO) (CM0277)

Key

AG	=	Acid (yellow) with gas formation
A	=	Acid (yellow)
NC	=	No change
Alk	=	Alkaline (red)

Hydrogen sulphide (H_2S)

Positive	=	Blackening
Negative	=	No blackening

Gas

Positive	=	Bubbles or splitting of agar
Negative	=	No bubbles or splitting of agar

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

TRIPLE SUGAR IRON AGAR (ISO) (CM0277)

Revision History

Section / Step	Description of Change	Reason for Change	Reference
N/A	Update to template and ISO	Change control	BT-CC-1901

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

PLATE COUNT AGAR (ISO) (CM0325)

PLATE COUNT AGAR (ISO) **CM0325**
(Tryptone Glucose Yeast Agar)

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 55ºC and 37ºC 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

Staphylococcus aureus	ATCC® 6538	0.5-2mm straw colonies
Staphylococcus aureus	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.

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

Escherichia coli	ATCC® 25922	WDCM00013	1-3mm straw colonies
Escherichia coli	ATCC® 8739	WDCM00012	1-3mm straw colonies
Staphylococcus aureus	ATCC® 25923	WDCM00034	0.5-2mm straw colonies
Bacillus subtilis	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.

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

X.L.D. MEDIUM CM0469

X.L.D. MEDIUM **CM0469**

Typical Formula*

Yeast extract	grams per litre	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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

X.L.D. MEDIUM CM0469

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

Pseudomonas aeruginosa	ATCC®9027	No growth or 0.5-2mm red colonies

For *Pseudomonas aeruginosa* ATCC®9027, a satisfactory result is represented by recovery equal to or less than 90% of the control medium.

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

Staphylococcus aureus	ATCC®6538	No growth

Negative strains are inhibited.

Inoculation using diminishing sweep technique

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

Escherichia coli	ATCC®11775	No growth or 0.5-4mm yellow colonies

Escherichia coli ATCC®11775 is inhibited or shall produce colonies with a negative diagnostic reaction.

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.

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

Shigella flexneri	ATCC®12022	0.5-2mm irregular, red colonies
Salmonella typhimurium	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

Enterococcus faecalis	ATCC®29212	No growth

Negative strains are inhibited.

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

Escherichia coli	ATCC®25922	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.

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 *Shigella sonnei*	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

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 25ºC
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

Salmonella nottingham	NCTC 7832	Turbid growth
Escherichia coli	ATCC® 11775	Turbid growth

A satisfactory result is represented by visible growth.

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

Salmonella typhimurium	ATCC® 14028	WDCM 00031	Turbid growth
Salmonella enteritidis	ATCC® 13076	WDCM 00030	Turbid growth
Escherichia coli	ATCC® 8739	WDCM 00012	Turbid growth
Escherichia coli	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

Cronobacter sakazakii	ATCC® 29544	WDCM 00214	Turbid growth
Cronobacter muytjensii	ATCC® 51329	WDCM 00213	Turbid growth

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

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

PSEUDOMONAS CETRIMIDE AGAR (USP, EP) CM0579

PSEUDOMONAS CETRIMIDE AGAR (USP, EP) **CM0579**

Typical Formula*

Gelatin peptone	grams per litre	20.0
Magnesium chloride		1.4
Potassium sulphate		10.0
Cetrimide		0.3
Agar		13.6

* adjusted as required to meet performance standards

Directions

Suspend 45.3g in 1 litre of distilled water. Add 10ml of glycerol. 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.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution - straw 1-2
Moisture level - less than or equal to 7%
pH 7.2 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 13.6g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

Tested in accordance with current USP/EP

Reactions after incubation at 32.5°C for 18 hours

Medium is challenged with 50-100 colony-forming units

Pseudomonas aeruginosa	ATCC®9027	0.25-1mm colonies

A satisfactory result is represented by recovery of positive strains equal to or greater than 60% of the control medium.

Reactions after incubation at 32.5°C for 48 hours

Medium is challenged with 50-100 colony-forming units

Pseudomonas aeruginosa	ATCC®9027	Fluorescent, green colonies

Reactions after incubation at 32.5°C for 72 hours

Medium is challenged with 1E+02 to 1E+03 colony-forming units

Salmonella typhimurium	ATCC®14028	No growth or 2-8mm white colonies

Negative strains are inhibited or shall produce at least a 1 log(10) reduction when compared to the control medium.

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

Escherichia coli	ATCC®8739	No growth or 2-8mm straw colonies

Negative strains are inhibited or shall produce at least a 3 log(10) reduction when compared to the control medium.

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

Proteus mirabilis	ATCC®12453	No growth
Staphylococcus aureus	ATCC®6538	No growth

Negative strains are inhibited.

Additional challenging strains are employed.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

PSEUDOMONAS CETRIMIDE AGAR (USP, EP) CM0579

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire Document	Reformatting to new template Update to test specification	Change control	BT-CC-1477
Reactions after incubation at 32.5°C for 72 hours	*Salmonella abony* NCTC6017 changed to *Salmonella typhimurium* ATCC®14028	Change control	BT-CC-2532

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BILE AESCULIN AGAR CM0888

BILE AESCULIN AGAR **CM0888**

Typical Formula*

	grams per litre
Peptone	8.0
Bile salts	20.0
Ferric citrate	0.5
Aesculin	1.0
Agar	15.0

* adjusted as required to meet performance standards

Directions

Suspend 44.5g in 1 litre of distilled water and bring gently to the boil to dissolve completely. Sterilize by autoclaving at 121°C for 15 minutes.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution - Straw/brown
Moisture level - less than or equal to 7%
pH - 7.1 ± 0.2 at 25°C
Clarity - clear
Gel strength - firm, comparable to 15g/litre of agar

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 18-24 hours

Medium is challenged with 10-100 colony-forming units

Enterococcus faecalis	ATCC®19433	0.25-1mm brown colonies, aesculin hydrolysis

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

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

Enterococcus faecalis	ATCC®29212	0.25-1mm brown colonies, aesculin hydrolysis
Enterococcus faecium	NCTC7171	0.25-1mm brown colonies, aesculin hydrolysis

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BILE AESCULIN AGAR CM0888

Enterococcus durans	ATCC®19432	0.25-1mm brown colonies, aesculin hydrolysis
Streptococcus bovis	ATCC®27960	0.25-1mm brown colonies, aesculin hydrolysis
Enterobacter aerogenes	ATCC®13048	1-2mm brown colonies, aesculin hydrolysis
Streptococcus pyogenes	ATCC®19615	No growth

For positive test strains inoculated using diminishing sweep technique, a satisfactory result is represented by growth in accordance with the specification. Negative strains are inhibited.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BILE AESCULIN AGAR CM0888

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Entire Document	Update to new document format and correction of typographical/minor errors. Addition of control media + result criteria.	Change control	BT-CC-1924

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

FRASER BROTH BASE (ISO) CM0895

FRASER BROTH BASE (ISO) **CM0895**

Typical Formula*

Proteose peptone	grams per litre	5.0
Tryptone		5.0
Meat extract		5.0
Yeast extract		5.0
Sodium chloride		20.0
Di-sodium hydrogen phosphate		12.0
Potassium dihydrogen phosphate		1.35
Aesculin		1.0
Lithium chloride		3.0

* adjusted as required to meet performance standards

Directions

To make Half Fraser Broth
Dissolve 12.9g in 225ml of distilled water. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of 1 vial of Half Fraser Selective Supplement (SR0166E) reconstituted as directed. Mix well and dispense into sterile containers.

Alternatively, dissolve 129.2g in 2.25 litres of distilled water. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of 1 vial of Half Fraser Selective Supplement (SR0166G) reconstituted as directed. Mix well and dispense into sterile containers.

To make Fraser Broth
Dissolve 28.7g in 500ml of distilled water. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add the contents of 1 vial of Fraser Selective Supplement (SR0156E) reconstituted as directed. Mix well and dispense into sterile containers.

Physical Characteristics

Straw, free-flowing powder
Colour on reconstitution - straw 2-3
Moisture level - less than or equal to 7%
pH 7.2 ± 0.2 at 25°C
Clarity - clear

Microbiological Tests Using Optimum Inoculum Dilution

Control Media: Brilliance™ Listeria Agar (ISO) or Columbia Blood Agar Base enriched with 5% v/v horse blood, where appropriate.

Tested with the addition of Fraser Selective Supplement SR0156

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

Inoculate 10ml quantities of medium to achieve 1-10 colony-forming units/ml (cfu/ml) of *Listeria* spp. Incubate broths at 37 ± 2°C for 24 ± 2 hours. Subculture onto Brilliance™ Listeria Agar (ISO) (CM1212, SR0257 & SR0258) and incubate plates at 37 ± 2°C for 24 - 48 hours.

Listeria monocytogenes	ATCC®7644
Listeria monocytogenes	ATCC®13932

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

Positive strains shall produce aesculin hydrolysis after 48 hours.

Reactions after incubation at 37 ± 2°C for 48 ± 2 hours

Inoculate 10ml quantities of medium to achieve 1E+03 to 1E+04 cfu/ml. Incubate broths at 37°C for 48 hours.

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

Negative strains shall produce no aesculin hydrolysis after 48 hours.

Testing performed in accordance with ISO11133:2014

Tested with the addition of Fraser Selective Supplement SR0156. For testing with the addition of Half Fraser Selective Supplement SR0166 refer to Half Fraser Selective Supplement SR0166E or SR0166G product specifications.

Inoculation with mixed cultures

Inoculate 10ml quantities of medium to achieve 1-10 colony-forming units/ml (cfu/ml) of *Listeria* spp., 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 37 ± 2°C for 24 ± 2 hours. Subculture onto Brilliance™ Listeria Agar (ISO) (CM1212, SR0257 & SR0258) and incubate plates at 37 ± 2°C for 24 ± 2 hours.

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

Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth
Listeria monocytogenes	ATCC®13932	WDCM00021	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®19433	WDCM00009	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®8739	WDCM00012	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth
Listeria monocytogenes	ATCC®35152	WDCM00109	0.5-1.0mm blue colonies with halo
+ *Escherichia coli*	ATCC®25922	WDCM00013	No growth
+ *Enterococcus faecalis*	ATCC®29212	WDCM00087	No growth

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

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 37 ± 2°C for 24 ± 2 hours. Subculture onto Brilliance™ Listeria Agar (ISO) (CM1212, SR0257 & SR0258) and Tryptone Soya Agar (CM0131) then incubate plates at 37 ± 2°C for 24 ± 2 hours.

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

Escherichia coli	ATCC®8739	WDCM00012	No growth (CM1212, SR0257 & SR0258)
Escherichia coli	ATCC®8739	WDCM00012	No growth or cream colonies (CM0131)
Escherichia coli	ATCC®25922	WDCM00013	No growth (CM1212, SR0257 & SR0258)
Escherichia coli	ATCC®25922	WDCM00013	No growth or cream colonies (CM0131)
Enterococcus faecalis	ATCC®19433	WDCM00009	No growth (CM1212, SR0257 & SR0258)
Enterococcus faecalis	ATCC®19433	WDCM00009	No growth or straw colonies (CM0131)
Enterococcus faecalis	ATCC®29212	WDCM00087	No growth (CM1212, SR0257 & SR0258)
Enterococcus faecalis	ATCC®29212	WDCM00087	No growth or straw colonies (CM0131)

A satisfactory result is represented by no growth of *Escherichia coli* and *Enterococcus faecalis* on Brilliance™ Listeria Agar (ISO) and <100 cfu on Tryptone Soya Agar.

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

FRASER BROTH BASE (ISO) CM0895

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Microbiological Characteristics	Change of Listeria plating medium	Change control	MOC-2023-0965

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BRILLIANCE™ SALMONELLA AGAR BASE CM1092

BRILLIANCE™ SALMONELLA AGAR BASE **CM1092**

Typical Formula*

	grams per litre
Salmonella Inhibigen ™ mix	14.0
Chromogenic mix	25.0
Agar	15.0

* adjusted as required to meet performance standards

Directions

Suspend 27g in 500ml of distilled water. Add the contents of 1 vial of Salmonella Selective Supplement (SR0194E) reconstituted as directed. 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.
NOTE: It is critical that the selective supplement is added prior to heating.

Physical Characteristics

Off-white, free-flowing powder
Colour on reconstitution - white to pale pink
Moisture level - less than or equal to 7%
pH - 7.3 ± 0.1 at 25°C (unsupplemented medium)
pH - 7.3 ± 0.1 at 25°C (complete medium)
Clarity - opaque
Gel strength - firm, comparable to 15.0g/litre of agar

Microbiological Tests Using Optimum Inoculum Dilution

Control Medium: Tryptone Soya Agar

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

Tested with the addition of Salmonella Selective Supplement SR0194

Medium is challenged with 10-100 colony-forming units

Salmonella typhimurium	ATCC®14028	1-2 mm purple/pink colonies
Salmonella enteritidis	ATCC®13076	1-2 mm purple/pink colonies
Salmonella arizonae	ATCC®13314	1-4 mm purple/pink colonies

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BRILLIANCE™ SALMONELLA AGAR BASE CM1092

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

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

Escherichia coli	ATCC®25922	No growth or 1-2mm cream colonies

Medium is challenged with greater than 1E+04 colony-forming units

Pseudomonas aeruginosa	ATCC®27853	No growth or 1-2mm pink colonies

Negative strains are inhibited or shall produce at least a 2 log (10) reduction when compared to the control medium.

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

Klebsiella pneumoniae	ATCC®29665	1-3 mm mucoid, blue colonies
Enterococcus faecalis	ATCC®29212	No growth
Proteus mirabilis	NCTC10975	No growth or ppt-0.5mm straw colonies

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

OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION

BRILLIANCE™ SALMONELLA AGAR BASE CM1092

Revision History

Section / Step	Description of Change	Reason for Change	Reference
Proteus mirabilis	Update to testing specification	Change control	BT-CC-1849
Entire Document	Correction of typographical/minor errors.	Change control	BT-CC-1931
Microbiological Tests	Addition of Control Medium and Result Criteria. Addition of *Salmonella arizonae* ATCC®13314. Correction of *Escherichia coli* inocula to 1E+02 to 1E+04 colony-forming units.	Change control	BT-CC-1931