	Document Owner Department: QC	BT-SPEC-0220
		Page 1 of 5
<b>OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION</b>		
<b>FRASER BROTH BASE (ISO) (CM0895)</b>		

## FRASER BROTH BASE (ISO)

CM0895

### Typical Formula\*

	grams per litre	
Proteose peptone		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 7%

pH 7.2 ± 0.2 at 25°C

Clarity - clear

	Document Owner Department: QC	BT-SPEC-0220
		Page 2 of 5
<b>OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION</b>		
<b>FRASER BROTH BASE (ISO) (CM0895)</b>		

### Microbiological Tests Using Optimum Inoculum Dilution

Control Media: Chromogenic Listeria Agar (CM1084) or Columbia Blood Agar Base (CM0331) 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 Chromogenic Listeria Agar (ISO) (CM1084 + SR0226 & SR0228) and incubate plates at 37 ± 2°C for 24 - 48 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 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.


<i>Bacillus cereus</i>	ATCC® 10876	No aesculin hydrolysis (no blackening)
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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 Chromogenic Listeria Agar (ISO) (CM1084 + SR0226 & SR0228) and incubate plates at 37 ± 2°C for 24 ± 2 hours

	Document Owner Department: QC	BT-SPEC-0220
		Page 3 of 5
<b>OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION</b>		
<b>FRASER BROTH BASE (ISO) (CM0895)</b>		

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

<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® 29212	WDCM00087	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® 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® 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
+ <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

A satisfactory result is represented by recovery of >10 cfu of *Listeria monocytogenes* on Chromogenic Listeria Agar (ISO) (CM1084).

	Document Owner Department: QC	BT-SPEC-0220
		Page 4 of 5
<b>OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION</b>		
<b>FRASER BROTH BASE (ISO) (CM0895)</b>		


### 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 Chromogenic Listeria Agar (ISO) (CM1084 + SR0226 & SR0228) 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

<i>Escherichia coli</i>	ATCC® 8739	WDCM00012 No growth (CM1084)
<i>Escherichia coli</i>	ATCC® 8739	WDCM00012 Cream colonies (CM0131)
<i>Escherichia coli</i>	ATCC® 25922	WDCM00013 No growth (CM1084)
<i>Escherichia coli</i>	ATCC® 25922	WDCM00013 Cream colonies (CM0131)
<i>Enterococcus faecalis</i>	ATCC® 19433	WDCM00009 No growth (CM1084)
<i>Enterococcus faecalis</i>	ATCC® 19433	WDCM00009 Cream colonies (CM0131)
<i>Enterococcus faecalis</i>	ATCC® 29212	WDCM00087 No growth (CM1084)
<i>Enterococcus faecalis</i>	ATCC® 29212	WDCM00087 Cream colonies (CM0131)

A satisfactory result is represented by no growth of *Escherichia coli* and *Enterococcus faecalis* on Chromogenic Listeria Agar (ISO) (CM1084) and <100 cfu on Tryptone Soya Agar (CM0131).

	Document Owner Department: QC	BT-SPEC-0220
		Page 5 of 5
<b>OXOID QUALITY ASSURANCE PRODUCT SPECIFICATION</b>		
<b>FRASER BROTH BASE (ISO) (CM0895)</b>		

### Revision History

Section / Step	Description of Change	Reason for Change	Reference
N/A	Update to ISO	Change control	BT-CC-1903