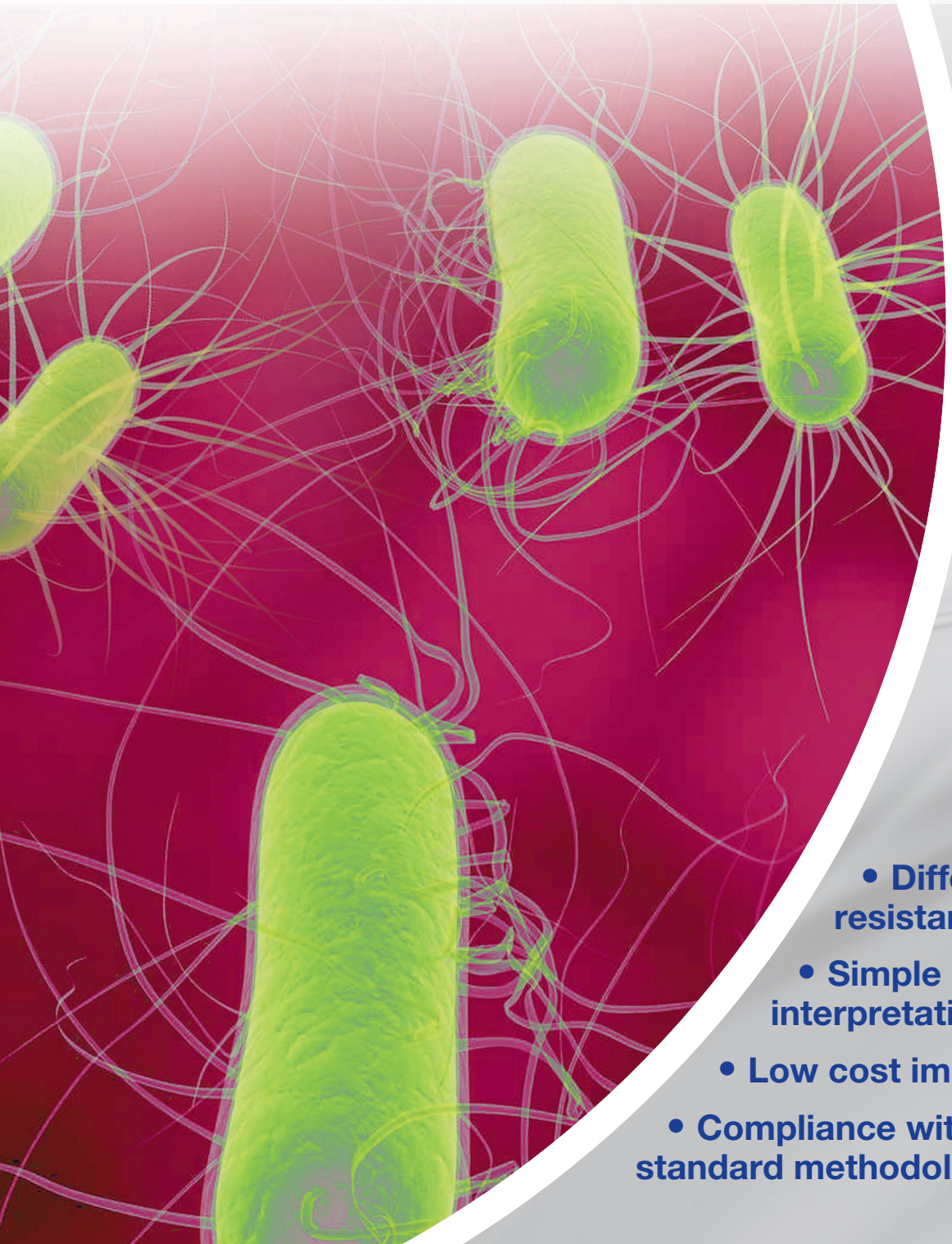
IVD solutions through partnership

Mast Group

# MASTDISCS® Combi

## ESBL & AmpC only Detection Disc Sets



- Differentiate resistance enzyme types
- Simple comparative interpretation
- Low cost implementation
- Compliance with international standard methodologies

# EXTENDED SPECTRUM β LACTAMASE DETECTION

**Extended spectrum beta-lactamases (ESBL) are bacterial enzymes which confer resistance to penicillin and cephalosporin antibiotics. The emergence of ESBL producing pathogens has become increasingly significant in limiting the antibiotic treatment options, representing a serious complication for antibiotic management.**

Mast Group Ltd.'s range of ESBL detection discs offers laboratories a simple, reliable and low cost means of identification and detection by double disc diffusion, using paired and combination disc sets.

The presence of an ESBL and/or AmpC is easily determined by zone size comparison when simultaneously tested with antibiotic and antibiotic plus inhibitor combinations.

## Visual of results

**D68C[1]**

**AmpC & ESBL Detection Set**
Confirmation of AmpC and/or ESβL production in Enterobacteriaceae

**A** CPD10

**B** CPD10 + ESβL inhibitor

**C** CPD10 + AmpC inhibitor

**D** CPD10 + ESβL inhibitor + AmpC Inhibitor

**Calculator programme is available to download from www.mastgrp.com**

**ESBL Positive**

**AmpC Positive**

**AmpC and ESBL Positive**

**AmpC and ESBL Negative**

CPD – Cefpodoxime

## D69C[2]

**AmpC Detection Set**
Confirmation of either chromosomal or plasmid acquired AmpC

**A** CPD10 + AmpC inducer

**B** CPD10 + AmpC inducer
+ ESβL inhibitor

**C** CPD10 + AmpC inducer
+ ESβL inhibitor
+ AmpC inhibitors

CPD – Cefpodoxime

**AmpC Positive**

**AmpC Negative**

## D63C[3]

**Cefepime 30 & Cefepime 30/Clavulanic Acid 10**
Confirmation of ESβL production in Enterobacteriaceae with chromosomal AmpC

CPM30
CPM30/CLAV10

CPM – Cefepime
CLAV – Clavulanic Acid

**ESBL Positive**

**ESBL Negative**

## D52C[4]

**Extended Spectrum β Lactamase Set**
Confirmation of ESβL production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC

CAZ30
CAZ30/CLAV10

CTX30
CTX30/CLAV10

CPD30
CPD30/CLAV10

CAZ – Ceftazidime
CLAV – Clavulanic Acid
CTX – Cefotaxime
CPD – Cefpodoxime

**ESBL Positive**

**ESBL Negative**

## D67C[5]

**Extended Spectrum β Lactamase Set (CPD10)**
Confirmation of ESβL production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC

CAZ30
CAZ30/CLAV10

CTX30
CTX30/CLAV10

CPD10
CPD10/CLAV1

CAZ – Ceftazidime
CLAV – Clavulanic Acid
CTX – Cefotaxime
CPD – Cefpodoxime

**ESBL Positive**

**ESBL Negative**

## D62C[6]

**Cefotaxime 30**
**& Cefotaxime 30 /Clavulanic Acid 10**

## D64C[6]

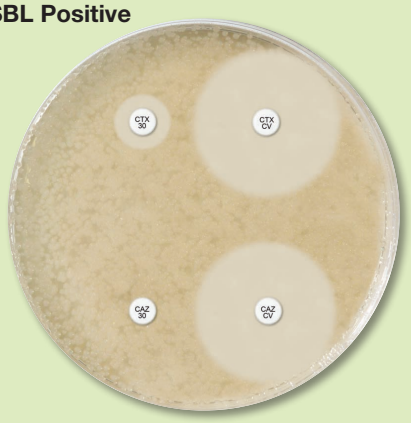
**Ceftazidime 30**
**& Ceftazidime 30/Clavulanic Acid 10**

Confirmation of ESβL production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC when both disc sets used concurrently

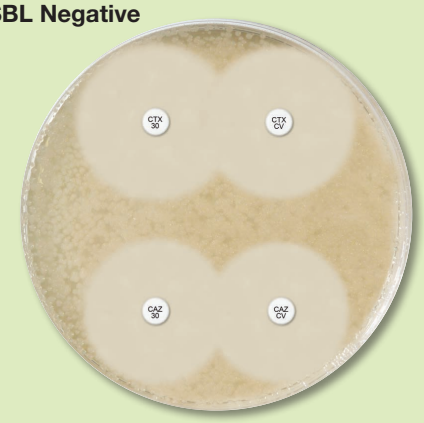
CTX30
CTX30/CLAV10
CAZ30
CAZ30/CLAV10

CTX – Cefotaxime
CAZ – Ceftazidime
CLAV – Clavulanic Acid

**ESBL Positive**




**ESBL Negative**




## D66C[7]

**Cefpodoxime 10 & Cefpodoxime 10/Clavulanic Acid 1**
Confirmation of ESβL production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC

CPD10
CPD10/CLAV1

CPD – Cefpodoxime
CLAV – Clavulanic Acid

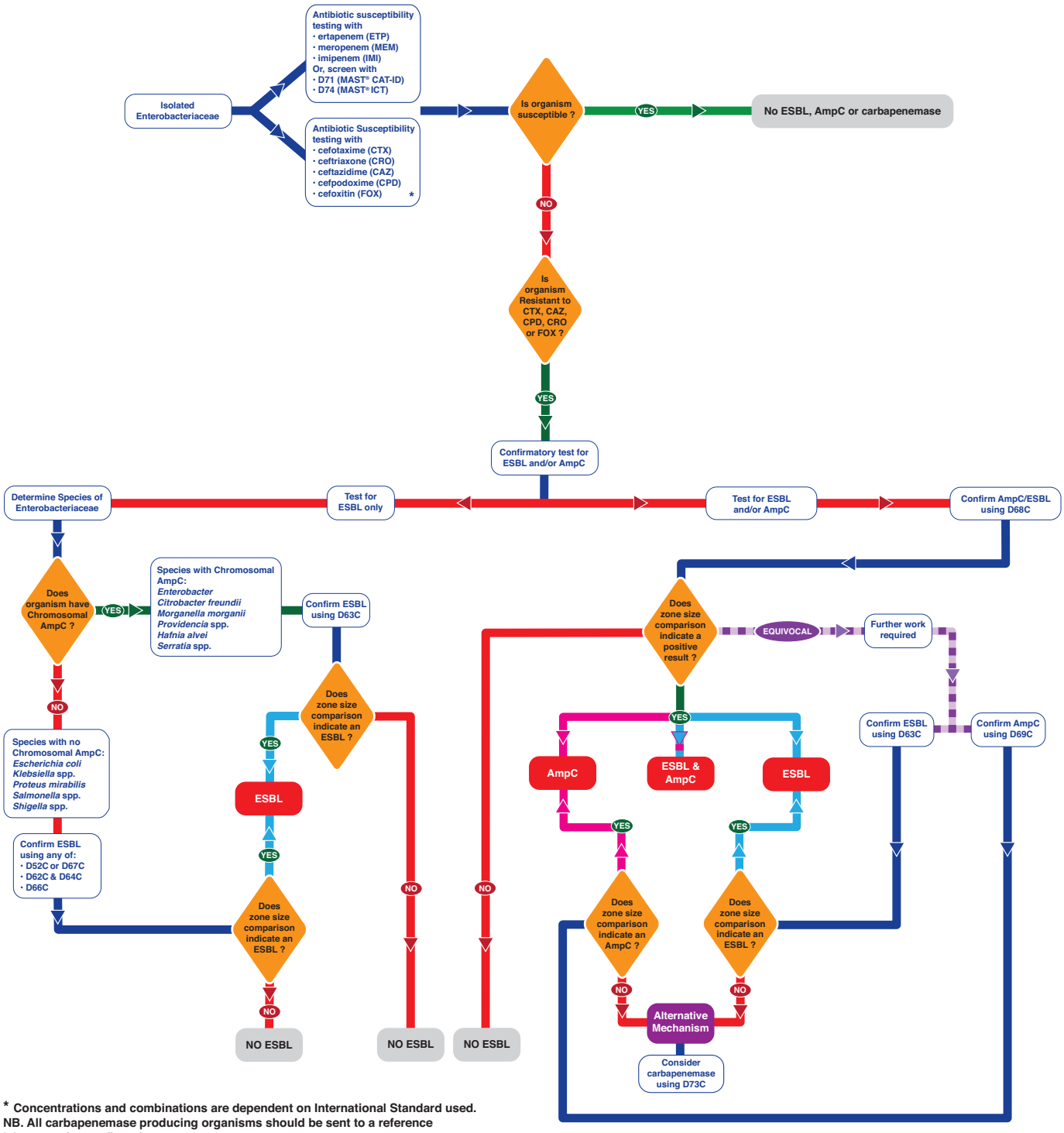
**ESBL Positive**

**ESBL Negative**

# Flowchart for laboratory use of MASTDISCS® *Combi*

## Key

D52C - Extended Spectrum β Lactamase Set (50 tests)
D62C - Cefotaxime 30ug & Cefotaxime 30ug/Clavulanic Acid 10ug (150 tests)
D63C - Cefepime 30ug & Cefepime 30ug/Clavulanic Acid 10ug (150 tests)
D64C - Ceftazidime 30ug & Ceftazidime 30ug/Clavulanic Acid 10ug (150 tests)
D66C - Cefpodoxime 10ug & Cefpodoxime 10ug/Clavulanic Acid 1ug (150 tests)
D67C - Extended Spectrum β Lactamase Set (CPD10) (50 tests)
D68C - AmpC & ESBL Detection Set (50 tests)
D69C - AmpC Detection Set (50 tests)
D71C - MAST® CAT-ID - Faropenem discs (250 tests)
D73C - MAST® *Carba plus* Detection Set (50 tests)
D74 - MAST® ICT Indirect Carbapenemase Test (25 tests)




* Concentrations and combinations are dependent on International Standard used.
NB. All carbapenemase producing organisms should be sent to a reference laboratory for confirmation

## Ordering Information

| Order Code | Product/Usage | Pack size | No. Tests |
|---|---|---|---|
| **D68C**[1] | **MAST**DISCS® *Combi* AmpC & EβBL Detection Set<br>Confirmation of AmpC and/or ESβL production in isolates of Enterobacteriaceae. When interpreted as 'further work required' use D69C to confirm AmpC production and D63C for confirmation of ESβL production when AmpC is also present. | 4 × 50 discs | 50 tests |
| **D69C**[2] | **MAST**DISCS® *Combi* AmpC Detection Set<br>Confirmation of AmpC production in isolates of Enterobacteriaceae with either plasmid acquired or chromosomal AmpC. Can be used when interpreted as 'further work required' on D68C for confirmation of AmpC production. | 3 × 50 discs | 50 tests |
| **D63C**[3] | **MAST**DISCS® *Combi* Cefepime ESβL ID Disc Set<br>Confirmation of ESβL production in isolates of Enterobacteriaceae with chromosomal AmpC e.g. *Enterobacter* spp., *Citrobacter freundii*, *Morganella morganii*, *Providencia* spp., *Hafnia alvei*, *Serratia* spp. Can be used when interpreted as 'further work required' on D68C for confirmation of ESβL production when AmpC is also present. | 6 × 50 discs | 150 tests |
| **D52C**[4] | **MAST**DISCS® *Combi* ESβL ID Disc Set<br>Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. *Escherichia coli*, *Klebsiella* spp., *Proteus mirabilis*, *Salmonella* spp., *Shigella* spp. | 6 × 50 discs | 50 tests |
| **D67C**[5] | **MAST**DISCS® *Combi* ESβL ID Disc Set (CPD10)<br>Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. *Escherichia coli*, *Klebsiella* spp., *Proteus mirabilis*, *Salmonella* spp., *Shigella* spp. | 6 × 50 discs | 50 tests |
| **D62C**[6] | **MAST**DISCS® *Combi* Cefotaxime ESβL ID Disc Set<br>Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. *Escherichia coli*, *Klebsiella* spp., *Proteus mirabilis*, *Salmonella* spp., *Shigella* spp. | 6 × 50 discs | 150 tests |
| **D64C**[6] | **MAST**DISCS® *Combi* Cefepime ESβL ID Disc Set<br>Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. *Escherichia coli*, *Klebsiella* spp., *Proteus mirabilis*, *Salmonella* spp., *Shigella* spp.<br>**D62C & D64C must be used concurrently** | 6 × 50 discs | 150 tests |
| **D66C**[7] | **MAST**DISCS® *Combi* Cefpodoxime ESβL ID Disc Set<br>Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. *Escherichia coli*, *Klebsiella* spp., *Proteus mirabilis*, *Salmonella* spp., *Shigella* spp. | 6 × 50 discs | 150 tests |

## Additional products from Mast Group Ltd.'s Range

| Order Code | Product | Pack size | No. Tests |
|---|---|---|---|
| **D71C** | **MAST**DISCS® *ID* CAT-ID - Carbapenemase Activity Test | 6 × 50 discs | 250 tests |
| **D72C** | **MAST**DISCS® *Combi* AmpC, ESBL & Carbapenemase Detection Set | 6 × 50 discs | 50 tests |
| **D73C** | **MAST**DISCS® *Combi* Carba plus | 5 × 50 discs | 50 tests |
| **D74** | **MAST**®*ID* - MAST® ICT - Indirect Carbapenemase Test | 25 devices | 25 tests |

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**United Kingdom**
**Mast Group Ltd.**
**Mast House**
**Derby Road, Bootle**
**Merseyside L20 1EA**

**Tel: + 44 (0) 151 933 7277**
**Fax: + 44 (0) 151 944 1332**
**e-mail: sales@mast-group.com**

**Germany**
**Mast Diagnostica GmbH**
**Feldstrasse 20**
**DE-23858 Reinfeld**

**Tel: + 49 (0) 4533 2007 0**
**Fax: + 49 (0) 4533 2007 68**
**e-mail: mast@mast-diagnostica.de**

**France**
**Mast Diagnostic**
**12 Rue Jean-Jacques Mention**
**CS 91106**
**80011 Amiens CEDEX 1**

**Tél. + 33 (0) 322 80 80 67**
**Fax + 33 (0) 322 80 99 22**
**e-mail: info@mast-diagnostic.fr**

**www.mast-group.com**